



RJP/JT

U.S. Express Mail Label No. : EV 208518556 US
Date of Deposit: April 3, 2003

ATTORNEY'S DOCKET NO.: C01104/70049

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ihor A. Lys, et al.
Serial No.: 09/213,581
Conf. No.: 6707
Filed: December 17, 1998
For: KINETIC ILLUMINATION SYSTEMS AND METHODS

Examiner: Wilson Lee
Art Unit: 2821

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Technology Group No. 2821
Commissioner for Patents
Washington, D.C. 20231

APPELLANTS' BRIEF PURSUANT TO 37 C.F.R. §1.192

This brief, submitted in triplicate, and fee of \$160 for a small entity under 37 C.F.R. §1.17(c), are submitted in furtherance of the Notice of Appeal filed on December 3, 2002 in the above-referenced application.

A petition and fee for a two month extension of time also is enclosed herewith. Any additional fees required for consideration of this paper are authorized to be charged to the deposit account identified on the two copies of the Transmittal of Appeal Brief filed herewith.

04/07/2003 AWONDAF1 00000091 09213581

02 FC:2402

160.00 DP

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I. Real Party in Interest (37 C.F.R. §1.192(c)(1))

The real party in interest in this application is the assignee, Color Kinetics, Inc., a Massachusetts corporation having a place of business at 10 Milk Street, Boston, Massachusetts 02108.

II. Related Appeals and Interferences (37 C.F.R. §1.192(c)(2))

There are no other appeals or interferences known to the appellants, the appellants legal representative, or the assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims (37 C.F.R. §1.192(c)(3))

Claims 1, 2, 8-26, 41, 42, 45-48, 50-54 and 56-76 are pending in this application, of which claims 1, 41, 42, 45, 51, 66, 68, 74, 75 and 76 are independent claims. Each of these claims was finally rejected in an Office Action dated June 5, 2002. The rejection of each of these claims is appealed. A copy of the claims, as pending, is attached as an Appendix.

The status of the claims is as follows:

- A. Claims 1, 2, 8-26, 41, 42, 45-48, 50-54 and 56-76 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over Phares (U.S. Patent No. 5,420,482; hereinafter "Phares"); and
- B. Claims 1, 2, 8-26, 41, 42, 45-48, 50-54 and 56-76 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over Strite (U.S. Patent No. 5,952,680; hereinafter "Strite").

IV. Status of the Amendments (37 C.F.R. §1.192(c)(4))

No amendments have been filed subsequent to the Final Office Action of June 5, 2002. The claims as submitted in the Appendix incorporate all prior amendments.

V. Summary of the Invention (37 C.F.R. §1.192(c)(5))

The invention involved in this Appeal is directed generally to methods and apparatus that associate variable color light generated by a light emitting diode (LED) based illumination system with one or more objects, for the purpose of attracting attention to such object(s) from an

observer. These methods and apparatus have tremendous application for a variety of advertising, retail, consumer sales and entertainment purposes, in which eye-catching dynamic lighting effects may be employed to attract attention to one or more objects of interest. Bright, fast, efficient and flexibly convenient variable color controllable LED-based light sources particularly facilitate effective implementation of such methods and apparatus.

For example, in various embodiments, as discussed in the specification beginning with line 1 of page 133 through line 16 of page 142 (in connection with Figs. 95-100), variable color light generated by an LED-based illumination system is projected from or onto one or more objects of interest so that the light affects or interacts with (e.g., is transmitted from, absorbed by, and/or reflected from) the object(s). An observer viewing the object(s) then sees at least some of the light and is attracted to the object(s) by the effect of the light (page 138, lines 6-16). In one aspect, light generated by the LED system and projected onto the object(s) is sufficiently bright such that the observer may readily see at least some of the light indirectly via the object (e.g., reflected from the object or passing through the object), rather than directly from the LED system (page 139, lines 10-24; Fig. 99).

In some embodiments, a selective color interaction between the light projected onto an object and the object itself is utilized to produce various alluring lighting effects that facilitate attracting attention to the object (line 8, page 133 – line 21, page 135; Figs. 95 and 96). For example, an illuminated object may have particular characteristics such that the object selectively absorbs one or more colors, while selectively reflecting one or more other colors.

In view of these characteristics, one embodiment of the invention is directed to methods and apparatus that illuminate the object with variable color light generated by an LED-based illumination system, in which the color of the generated light is varied over a period of time. In one aspect of this embodiment, an observer may perceive a change in color associated with the object being illuminated by the light, due to the selective color interaction between the generated light and the object (e.g., different colors are reflected from the object at different times). In another aspect, the observer may perceive an illusion of motion in at least a portion of the object being illuminated by the light, due to the selective color interaction between the generated light and the object (line 15, page 136 – line 5, page 138; Figs. 97 and 98). In yet another aspect, the

light generated by the LED system may be varied in response to one or more external conditions that are measured or detected, for example, in proximity to the object(s) (page 134, lines 4-6).

As mentioned above, several embodiments of the invention may be implemented for a variety of advertising, retail, entertainment and consumer sales purposes (page 136, lines 1-10). Examples of objects according to the present invention that may be configured with an LED-based illumination system to transmit variable color light, and/or that may be illuminated by variable color light from such an LED system, include but are not limited to various display cases (e.g., retail displays, museum exhibits, theatre stages, dioramas), various containers (e.g., beverage containers), vending machines (e.g., soda, snacks, candy, gumballs, cigarettes, condoms, novelties, etc.) and articles of clothing (line 3, page 141 – line 16, page 142; Fig. 100). Additionally, in other embodiments, one or more LED-based light sources may be particularly positioned with respect to various stencils, gobos, logos, patterned materials or works of art so that images of these objects are projected onto a surface, for example, to create attractive lighting effects incorporating the outlines and/or other image content of these objects (page 140, lines 1-12).

VI. Issues (37 C.F.R. §1.192(c)(6))

- A. Whether the rejections of claims 1, 2, 8-26, 41, 42, 45-48, 50-54 and 56-76 as allegedly being obvious over Phares alone should be reversed, when Phares completely fails to disclose or suggest at least one feature in each of the claims, the Examiner fails to identify a specific motivation or suggestion in the prior art to modify Phares to include all of the missing features, and the Examiner fails to identify any reasonable expectation of success in modifying Phares; and
- B. Whether the rejections of claims 1, 2, 8-26, 41, 42, 45-48, 50-54 and 56-76 as allegedly being obvious over Strite alone should be reversed, when Strite completely fails to disclose or suggest at least one feature in each of the claims, the Examiner fails to identify a specific motivation or suggestion in the prior art to modify Strite to include all of the missing features, and the Examiner fails to identify any reasonable expectation of success in modifying Strite.

VII. Grouping of Claims (37 C.F.R. §1.192(c)(7))

- A. **Group I.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claims 1, 2, 8, 9, 14, 15-18, 51-53, 56, 58 and 72 stand or fall together. Claim 1 is representative.
- B. **Group II.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claims 10-13, 41 and 71 stand or fall together. Claim 41 is representative.
- C. **Group III.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claims 42 and 70 stand or fall together. Claim 42 is representative.
- D. **Group IV.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claims 25, 26 and 57 stand or fall together. Claim 25 is representative.
- E. **Group V.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claims 45-48, 50, 63 and 65 stand or fall together. Claim 45 is representative.
- F. **Group VI.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claims 54, 61 and 62 stand or fall together. Claim 54 is representative.
- G. **Group VII.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claims 19, 21, 59 and 75 stand or fall together. Claim 75 is representative.
- H. **Group VIII.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claims 20, 22, 23, 24, 60 and 76 stand or fall together. Claim 76 is representative.
- I. **Group IX.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claims 66 and 67 stand or fall together. Claim 66 is representative.
- J. **Group X.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claims 68, 69, 73 and 74 stand or fall together. Claim 74 is representative.
- K. **Group XI.** For purposes of this appeal only and for the rejections under 35 U.S.C. §103, claim 64 stands alone.

VIII. Argument (37 C.F.R. §1.192(c)(8)(iv))

Applicants respectfully request that the Examiner's final rejection of all of the claims be reversed. The claims as presented are believed to be in allowable condition.

A. The obviousness rejection of every pending claim, based upon respective single references, should be reversed, as the rejections are unsupported and in violation of Federal Circuit case law and the MPEP.

As set forth in MPEP § 2143, three criteria must be met in order to establish a *prima facie* case of obviousness. First, there must be some specific suggestion or motivation, either in the cited reference(s) or in the knowledge generally available to one of ordinary skill in the art, to modify the reference(s). Second, there must be a reasonable expectation of success. The specific teaching or suggestion to modify the reference(s), as well as the reasonable expectation of success, must both be found in the prior art and not based on Applicants' disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Third, the reference(s) must teach or suggest all of the claimed features.

In the present application, the Examiner has significantly failed to establish a *prima facie* case of obviousness.

First, both of the cited Phares and Strite references fail to disclose or suggest one or more features of each of Applicants' independent claims; specifically, at least one element of each independent claim is *entirely missing* from both of the cited references, as well as the other references of record. The Examiner contends otherwise, and summarily makes the wholly unsupported and generalized statement that "the prior art disclose [sic] all the claimed features on [sic] the rejected claims." (Final Office Action, page 9, item 4). The Examiner is factually wrong, as discussed in detail below. For at least this reason, the obviousness rejections are improper.

Second, the Examiner has completely failed to point to any specific motivation or suggestion in the prior art to modify the cited Phares or Strite references to provide the missing claim elements. It is horn book patent law that, to support an obviousness rejection, the Examiner *must* specifically identify a motivation to change the prior art to fall within the scope of the claims. In re Dembiczak, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999) (reversing rejection because specific motivation in the prior art not identified). If the Examiner fails to

clearly and particularly identify in the prior art any suggestion, teaching, or motivation to modify a reference, the rejection cannot be maintained. Id (emphasis added).

With respect to such suggestion or motivation, in the present case the Examiner has at best vaguely alluded to purported general knowledge in the art to provide motivation to modify the cited references so as to include the missing claim elements. In response, Applicants have expressly traversed this assertion and, as set forth in MPEP §2144.03, have requested that the Examiner cite one or more specific references to support his position regarding purported general knowledge in the art. The Examiner has failed to provide any such support; instead, the Examiner maintains that he “is not required to find out a suggestion or motivation in a cited reference since such motivation is in the knowledge generally available to one of ordinary skill in the art.” (Final Office Action, page 9, item 4). In at least this respect, the Examiner is legally wrong; as discussed above, the Examiner must specifically identify a motivation to change the prior art to fall within the scope of the claims. Dembiczak, 175 F.3d at 999-1000.

Rather than pointing to any specific motivation or suggestion to modify the cited references, and impermissibly drawing on hindsight using the benefit of Applicants’ disclosure, the Examiner attempts to support his obviousness rejections by making the incredibly broad assertion that *any* modification to, or method of using, the apparatus of either Phares or Strite for *any* purpose is allegedly *per se* obvious; similarly, the Examiner contends that *any* combination of the apparatus of either Phares or Strite with *any* other element or apparatus known in the art is allegedly *per se* obvious. (see Final Office Action, page 3 ¶2, page 4 ¶3, page 5 ¶3, page 7 ¶1, page 8 ¶6, and page 10, item 6). As a result, the Examiner deems that all of Applicants’ claims are obvious over these references, even though these claims recite several features not taught or suggested in any of the references of record.

This reasoning is legally untenable. It is well settled that the mere fact that references can be modified does not render the resultant modification obvious unless the prior art also specifically suggests the desirability of the modification. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). More alarmingly, the Examiner’s reasoning smacks of the type of *per se* rules and generic citations to the “general knowledge or level of skill in the art” that the Federal Circuit has forbidden. In re Ochiai, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (“The use of *per se*

rules, while undoubtedly less laborious than a searching comparison of the claimed invention – including all its limitations - with the teachings of the prior art, flouts section 103 and the fundamental case law applying it...reliance on *per se* rules of obviousness is legally incorrect.”).

Finally, the Examiner fails to point to any evidence in the prior art that there is any reasonable expectation of success in modifying the cited references to provide the missing elements required by Applicants’ claims. The Examiner’s only comment in connection with a reasonable expectation of success has absolutely no basis in the prior art, and moreover is nonsensical: “[R]easonable expectation of success does exist. Merely using the Phares (or Strite) invention for illuminating any different objects (such as the objects as claimed) is reasonably [sic] success.” (Final Office Action, page 9, item 4). To the contrary, there is absolutely no evidence in either Phares or Strite, or any other reference of record, that the teachings of Phares or Strite are at all suitable for, or applicable to, Applicants’ claimed methods or apparatus.

In sum, the Examiner has failed to meet his burden with respect to each of the three elements required to establish a *prima facie* case of obviousness. Failure to meet any one of these elements – a teaching or suggestion of all claim elements, a specific suggestion or motivation to modify the prior art, and a reasonable expectation of success – is sufficient to render such a rejection improper. In the present case, *the Examiner’s basis for rejection is deficient with respect to all three elements*. Accordingly, the rejections must be reversed.

B. The claim rejections over Phares should be reversed.

As discussed above, at least one element of each of Applicants’ claims is entirely missing from Phares. These missing elements are discussed in detail below. Furthermore, the Examiner has not pointed to any specific motivation or suggestion in the prior art to modify Phares to provide the missing element(s). Moreover, the Examiner has failed to specifically identify in the prior art any reasonable expectation of success in making any such modification to Phares.

1. Discussion of the Phares reference

Phares is directed to a controlled lighting system for decorative lighting, automotive, and display purposes (e.g., signs for advertising). It is noteworthy that the teachings of Phares are limited to examples of lighting apparatus that are intended to be viewed directly by an observer.

(In particular, Phares makes no mention of any lighting apparatus or system that may be used to illuminate other objects.) More specifically, nowhere in the reference does Phares disclose or suggest any form of lighting apparatus or system that is used in combination with other objects, such as various containers (e.g., beverage containers), vending machines, articles of clothing, retail display arrangements (e.g., food, clothing or other merchandise), and the like.

Rather, Phares merely discloses lighting systems that are used by themselves primarily for decorative purposes, such as Christmas lighting (col. 7, lines 56-58). Phares also discloses a display sign for advertising, such as the “happy face” sign shown in Phares’ Figure 10 (col. 8, lines 50-62), as well as a tail light assembly used in automotive lighting (col. 9, lines 4-18). In each of these embodiments, the lighting system of Phares of course may itself produce observable light; however, nowhere in the reference does Phares disclose or suggest that the lighting system is designed for, or capable of, illuminating (e.g., projecting light of sufficient brightness onto) another object or otherwise interacting with another object in any way (e.g., such that an observer senses the generated light indirectly via the object rather than directly from the lighting system).

It also is noteworthy that nowhere in the reference does Phares mention the use of light emitting diodes (LEDs) in the disclosed lighting systems. (Rather, Phares discloses only the use of “lighting elements” in the lighting systems, and at no point gives a single specific example of an LED “lighting element” that would be suitable for the disclosed lighting systems.)

2. **The rejection of the Group I claims (1, 2, 8, 9, 14, 15-18, 51-53, 56, 58 and 72) should be reversed because Phares fails to disclose or suggest a retail display, an LED system, or any method of attracting attention to a retail display by projecting light from an LED system onto the retail display.**

Claim 1 is representative of the Group I claims (all of which are method claims), and is directed to a method for attracting attention from an observer to a retail display. The method of claim 1 comprises acts of: 1) providing an LED system to generate light of a range of colors within a color spectrum; 2) placing the LED system to project the light, when generated, onto the retail display such that the observer sees at least some of the light substantially indirectly via the retail display, and not directly from the LED system; and 3) generating the light so as to

illuminate the retail display. The Group I claims are separately patentable and not obvious over Phares, relative to the other claim groups, for the specific reasons set forth below.

Phares does not remotely teach or suggest the method of claim 1. In particular, Phares neither discloses nor suggests a retail display, an LED system, or using Phares' lighting system or any other lighting system to illuminate a retail display (or any other object of any kind). There simply is no teaching in Phares that remotely suggests that the disclosed lighting system would reasonably be expected to be successful at illuminating a retail display (or any other object) so as to draw an observer's attention to the retail display. Rather, the teachings of Phares are limited to lighting systems which, at best, draw attention to *themselves*. Specifically, there is no disclosure or suggestion whatsoever in Phares, or in any other reference of record, that would lead one of ordinary skill to reasonably expect that the lighting system of Phares would provide a sufficient brightness to adequately illuminate a retail display so as to attract attention to the retail display.

In the Final Office Action, the Examiner concedes that Phares "fails to explicitly disclose the specific usage as claimed" (e.g., illuminating a retail display) (Final Office Action, page 3 ¶3). The Examiner asserts, however, that allegedly

[I]t would have been obvious to one of ordinary skill in the art to use Phares' invention to illuminate *any* object directly or indirectly in order to provide brightness to the observer on the object. Since Phares fails to limit the choice of all kind [sic] of usage, the implementation of such specific usage is not restricted. Any other usages [sic] should be considered as intended uses.

Id. (emphasis added).

While the Examiner's comments here are somewhat convoluted, even the most generous reading of these comments reveals that the Examiner's understanding of "intended use" is at best confused, and that the basis of his obviousness rejection is legally insufficient. Specifically, the Examiner points to no specific suggestion or motivation whatsoever in the prior art to modify Phares in any manner; instead, the Examiner merely makes the sweeping assertion that it is obvious to use the lighting system of Phares for *any* purpose, including illuminating a retail display as recited in claim 1, without pointing to a single prior art reference that mentions the illumination of a retail display in any manner. The Examiner further suggests that one would be inclined to use Phares to illuminate *any* object "to provide brightness to the observer on the

object,” but the Examiner fails to point to any suggestion whatsoever that Phares would be capable of providing sufficient brightness for such a purpose.

Instead, in support of the rejection of claim 1 over Phares based on “intended use,” the Examiner merely cites In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458, 459 (CCPA 1963) without minimally explaining the possible applicability of these cases (see Final Office Action, page 10, item 6). The Examiner’s reliance on these authorities, however, is significantly misplaced.

Both Casey and Otto stand for the proposition that the manner of intended use of a claimed *structure* is of no significance to patentability. See Otto, 136 USPQ at 459-460 (“ [T]he inclusion of the material or article worked upon by a structure being claimed does not impart patentability to the claims.”), and Casey, 152 USPQ at 238 (“The manner or method in which a machine is to be utilized is not germane to the issue of patentability of the machine itself.”). Accordingly, these cases deal with the patentability of *apparatus or machine* claims that recite primarily *structural* features; hence, Casey and Otto have absolutely no applicability to a *method* such as that recited in Applicants’ claim 1.

In citing Casey and Otto, the Examiner maintains that:

[A] recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art.

(Final Office Action, page 10, item 6). This assertion is particularly perplexing when applied to claim 1, which is neither claiming a structure nor a process of making, but rather a *method* of illuminating a retail display using an LED-based illumination system so as to attract an observer’s attention to the retail display. It is the totality of the *process steps or acts* recited in claim 1, not any particular structure or use of a structure in these claims, that must distinguish over the prior art to be patentable. In this regard, the Examiner has completely failed to meet his burden of showing that claim 1 is obvious over the prior art; he has not pointed to even a single prior art reference that discusses the illumination of retail displays in any manner.

Instead, the Examiner clearly is impermissibly using hindsight in formulating his so-called “intended use” argument. Specifically, the Examiner uses Applicants’ own disclosure (e.g., by pointing to the illuminated objects discussed therein) in an attempt to establish the motivation to modify Phares. This is clearly prohibited by Federal Circuit case law and the MPEP (“The teaching or suggestion to modify the reference, as well as the reasonable expectation of success, must both be found in the prior art *and not based on Applicants’ disclosure.*” MPEP §2143) (emphasis added).

Not only does Phares fail to disclose or suggest a retail display or any method of illuminating a retail display to attract the attention of an observer, but Phares additionally fails to disclose or suggest acts of providing an LED system to generate light of a range of colors within a color spectrum, and placing the LED system to project the light onto the retail display, as recited in claim 1.

The Examiner concedes that Phares “fails to literally or explicitly disclose the light elements as LEDs.” (Final Office Action, page 2, item 2 ¶3). The Examiner asserts, however, that “since Phares does not limit the choices from all kinds of light elements, the implementation of such light element [sic] (LEDs) **is not restricted** to his invention.” *Id.* (emphasis original). Again, the Examiner’s comments here are convoluted and difficult to understand. Inasmuch as they can be understood, however, the Examiner appears to be saying that as long as Phares does not explicitly indicate that one cannot use LEDs with his invention, then using LEDs with Phares is *per se* obvious.

This plainly is legally incorrect. As discussed above, the mere possibility that Phares *could* be modified to include LEDs does not render the resultant modification obvious unless the prior art also specifically suggests the desirability of the modification. See In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). The fact remains that Phares is completely silent with respect to LEDs.

In a previous Office Action mailed October 10, 2001, the Examiner concluded, however, that not only was using LEDs with Phares *per se* obvious notwithstanding Phares’ silence in this regard, but that Phares’ lighting elements necessarily must be LEDs

since any other light elements, such as incandescent light, halogen lamp, fluorescent lamp, electroluminescent device [sic] must require capacitive device or ballast to obtain charging voltage for starting illumination. Only LEDs do not need any capacitive device or ballast for starting illumination.

(October 10, 2001 Office Action, page 3 ¶3). In the Final Office Action, the Examiner reiterates this position:

Phares discloses that those light elements receives [sic] digital signals directly from the microprocessor without using any capacitive device or ballast for initiating. Therefore, any skilled in the art would understand or recognize that Phares' light elements represent LEDs in figures 6-8.

(Final Office Action, page 2, item 2 ¶3).

The Examiner's analysis here is both confusing and technically incorrect.

(First, Phares light elements do not receive digital signals directly from a microprocessor, as alleged by the Examiner.) Rather, as clearly shown by Phares in Fig. 6 and as discussed in Phares beginning at line 58 of column 6, *et seq.*, Phares' light elements are driven by an analog current provided via respective digital-to-analog converters (94R, 94B, and 94G) that include 4-bit latches (132R, 132B, and 132G). These 4-bit latches receive digital signals that are converted to *analog* signals, which in turn are applied via a resistor bank and a transistor to each light element respectively. Hence, Phares light elements clearly do not receive digital signals directly from a microprocessor, and the Examiner's statement in this regard plainly is wrong.

Second, the Examiner blatantly contradicts himself: on one hand, the Examiner contends that an electroluminescent device must require a capacitive device or ballast "to obtain charging voltage for starting illumination," yet on the other hand, the Examiner asserts that "[o]nly LEDs do not need any capacitive device or ballast for starting illumination." (October 10, 2001 Office Action, page 3 ¶3). However, *an LED is an electroluminescent device*. Thus, it is impossible to reconcile the Examiner's statements in this regard.

Third, the Examiner clearly is technically incorrect in asserting that "[o]nly LEDs do not need any capacitive device or ballast for starting illumination." This simply is not true; in particular, at least conventional incandescent light sources, which ubiquitously are used around

the world, do not require any capacitive device or ballast to initiate illumination. Numerous types of common incandescent bulbs simply require a standard AC voltage power source (e.g., 120 or 220 VAC), or a significantly lower voltage DC power source (e.g., 12 Volts, as in a car battery) directly applied to the bulb to generate light. No capacitive devices or ballasts are required.

In asserting that Phares' light elements necessarily represent LEDs and cannot be incandescent lights because Phares does not use any capacitive device or ballast with the lighting elements, the Examiner contends that "incandescent light requires capacitive means or ballast [sic] embedded in the threaded base or bulb for exciting the filaments," referring to patents to Matsuda, et al. (U.S. Patent No. 5, 432,408) and Anderson, et al. (U.S. Patent No. 3,858,086) (Final Office Action, page 10 ¶1). First, it is particularly noteworthy that neither of these patents discloses or suggests that incandescent lights *require* capacitive means or a ballast; specifically, neither of the patents even mentions a ballast, and the patents discuss only *optional* circuitry that may be used in conjunction with particular gas filling compositions (e.g., Matusda) or filament constructions (e.g., Anderson) in an incandescent bulb to improve the longevity of these devices. Second, the Examiner has not formally cited either of these patents against any of the claims, alone or in combination with Phares. In sum, the Examiner's reliance on these references is misplaced and unclear at best.

In view of the foregoing, and especially since Phares is completely silent regarding the particular types of lighting elements that would be suitable for Phares' lighting system, it is entirely possible that Phares lighting elements could be incandescent lights or still other types of light sources that are not LEDs; Phares simply does not say, nor does Phares provide any suggestion in this regard. This notion follows the Examiner's reasoning that "Phares does not limit the choices from all kinds of light elements." (Final Office Action, page 2, item 2 ¶3)

However, the Examiner again contradicts his own reasoning; in response to the Applicants' argument that Phares lighting elements could be incandescent lights, the Examiner disagrees by saying "nowhere in Phares is there any incandescent light." (Final Office Action, page 9, item 5). The Examiner cannot have it both ways. If Phares is completely silent as to a particular type of lighting element, why is it more likely that Phares could be implemented with

LEDs and not incandescent lights? The Examiner has failed to convincingly answer this question.

Rather, in attempting to bolster his argument that Phares could not be implemented with incandescent lights, the Examiner incorrectly states that “the lighting elements of Phares is [sic] switched frequently by the transistors (T1-T3) controlled by microprocessor [sic].” (Final Office Action, page 9, item 5). The Examiner goes on to say that “any skilled in the art would recognize that incandescent light is very insufficient [sic] being switched on/off frequently since the repetitious excitations of the filaments and gas inside the incandescent light would elevate excessive heat of the filaments, it [sic] would shorten the life of the filaments...[t]herefore, incandescent light being used by Phares is unlikely possible [sic].” Id.

Again, the Examiner is completely incorrect in his characterization of the Phares reference. At no point does Phares disclose or suggest that any transistors are switched frequently to control lighting elements. Instead, in connection with Phares’ Fig. 6, Phares explicitly discloses that transistors T1, T2 and T3 are controlled by a digital-to-analog (D/A) converter comprising a 4-bit bi-stable latch (IC1, IC2 and IC3 respectively) in combination with four resistors R1 through R4. (Phares, col. 6, line 58 through col. 7, line 2). The base current of each transistor T1, T2 and T3 is determined by the number of outputs of each 4-bit bi-stable latch that are set to 5 volts so as to provide a bias voltage to the resistors R1 through R4. In this manner, a variable analog bias voltage is applied to the base of each transistor to control the lighting element coupled to the transistor. This clearly does not constitute a “frequent switching on/off” of the lighting elements, as alleged by the Examiner.

Since the Examiner’s “frequently switched” line of reasoning is completely unsupported and has no basis in Phares, the Examiner’s subsequent statement that “any skilled in the art would recognize that incandescent light is very insufficient being switched on/off frequently...” is completely nonsensical in this context.

The Examiner then contends that it would be more reasonable to use LEDs in Phares because “LED Christmas or ornamental lights have long been being [sic] used,” referring to patents to Moore et al (U.S. Patent No. 5,412,284), Olden et al (U.S. Patent No. 5,256,948), and Sanders et al (U.S. Patent No. 4,682,078). (Final Office Action, page 10 ¶1). However, again

the Examiner merely points to these references and summarily concludes that they provide some suggestion or motivation to modify Phares; the Examiner fails to specifically point to such suggestion or motivation in these references, and moreover does not formally cite any of these references against any of Applicant's claims, alone or in combination with Phares.

Even if it were reasonable to apply the teachings of any of the Moore, Olden, and Sanders patents to Phares, one would still be left in Phares with a decorative or ornamental lighting system employing LEDs. However, this alone still falls far short of Applicant's claim 1, which requires that an LED system be placed to project light onto a retail display such that an observer sees at least some of the light substantially indirectly via the retail display, and not directly from the LED system. Again, there certainly is no mention in Phares whatsoever (or in any other reference of record, other than in Applicant's own specification) of illuminating a retail display in any manner. In fact, Applicants are at a loss as to how the Examiner could possibly have characterized Phares for this purpose, other than by reading the present application, which constitutes impermissible hindsight.

In sum, Phares fails to disclose or suggest a retail display, an LED system, or using Phares' lighting system or any other lighting system to illuminate a retail display. Additionally, the Examiner has failed to identify a specific motivation or suggestion in the prior art to modify Phares to include all of the missing features required by claim 1, and further has failed to identify any reasonable expectation of success in modifying Phares to include these features. Accordingly, the Examiner has failed to meet his burden with respect to all three elements required to establish a *prima facie* case of obviousness: 1) a teaching or suggestion of all claim elements, 2) a specific suggestion or motivation to modify the prior art, and 3) a reasonable expectation of success. For at least the foregoing reasons, the rejection of the Group I claims (1, 2, 8, 9, 14, 15 through 18, 51 through 53, 56, 58 and 72) under 35 U.S.C. § 103(a) as allegedly being obvious over Phares should be reversed.

3. The rejection of the Group II claims (10-13, 41 and 71) should be reversed because Phares fails to disclose or suggest a container containing a liquid and illuminated from the inside by light generated by at least one LED.

Claim 41 is representative of the Group II claims, and is directed to an apparatus, comprising at least one LED and an addressable controller having an alterable address, wherein the controller has a signal generator to generate control signals to control light emitted by the at least one LED. The apparatus of claim 41 further comprises a receiver coupled to the addressable controller to receive data corresponding to the alterable address and indicative of the light to be emitted by the at least one LED. Claim 41 recites that the apparatus also includes a non-opaque container containing a non-opaque liquid and arranged such that the non-opaque container is illuminated from the inside by the light generated by the at least one LED. The Group II claims are separately patentable and not obvious over Phares, relative to the other claim groups, for the specific reasons set forth below.

Phares does not remotely teach or suggest the apparatus of claim 41. In particular, Phares neither discloses nor suggests an apparatus comprising at least one LED and a non-opaque container containing a non-opaque liquid and arranged such that the non-opaque container is illuminated by the light generated by the at least one LED. Again, there is no disclosure or suggestion whatsoever in Phares, or in any other reference of record, that would lead one of ordinary skill to consider using the lighting system of Phares in connection with a non-opaque container containing a non-opaque liquid.

As with the Group I claims discussed above, the Examiner awkwardly applies his so-called “intended use” argument to claim 41, alleging that although Phares fails to explicitly disclose a non-opaque container, it would have been obvious to one of ordinary skill in the art to use Phares’ invention to illuminate *any* desired object directly or indirectly. (Final Office Action, page 4 ¶3; emphasis added). Again, such a sweeping assertion by the Examiner constitutes a legally flawed argument in support of an obvious rejection. In sum, Phares simply does not disclose or suggest a non-opaque container containing a non-opaque liquid as recited in claim 41, and neither does any other reference of record. Moreover, as discussed above in connection with claim 1 (the Group I claims), Phares likewise fails to disclose or suggest at least one LED to generate light so as to illuminate a non-opaque container from the inside.

For at least the foregoing reasons, the rejection of the Group II claims (10 through 13, 41 and 71) under 35 U.S.C. § 103(a) as allegedly being obvious over Phares should be reversed.

4. The rejection of the Group III claims (42 and 70) should be reversed because Phares fails to disclose or suggest a vending machine and an illumination system disposed within the vending machine for illuminating the vending machine, wherein the illumination system comprises at least one LED.

Claim 42 is representative of the Group III claims, and is directed to an apparatus, comprising a vending machine and illumination system disposed within the vending machine for illuminating the vending machine. The illumination system recited in claim 42 comprises at least one LED, and an addressable controller having an alterable address. The controller has a signal generator to generate control signals to control light emitted by the at least one LED. The illumination system of the apparatus recited in claim 42 further includes a receiver coupled to the addressable controller to receive data corresponding to the alterable address and indicative of the light to be emitted by the at least one LED. The Group III claims are separately patentable and not obvious over Phares, relative to the other claim groups, for the specific reasons set forth below.

Phares fails to disclose or suggest a vending machine and an illumination system disposed within the vending machine for illuminating the vending machine, wherein the illumination system comprises at least one LED, as recited in claim 42. As discussed above in connection with the Group I and Group II claims, again the Examiner applies his so-called “intended use” argument to reject claim 42, alleging that it would have been obvious to one of ordinary skill in the art to use Phares’ invention to illuminate any object directly or indirectly. The Examiner has no factual or legal basis in support of this argument; neither Phares nor any other reference of record remotely refers to a vending machine or an LED-based illumination system disposed in a vending machine. Accordingly, for reasons similar to those discussed above in connection with the Group I and Group II claims, the rejection of the Group III claims (42 and 70) under 35 U.S.C. § 103(a) as allegedly being obvious over Phares should be reversed.

5. The rejection of the Group IV claims (25, 26 and 57) should be reversed because Phares fails to disclose or suggest changing the color of light generated by an LED or an LED system over a period of time in response to external conditions.

Each of the Group IV claims is a dependent claim; claims 25 and 26 depend from claim 1, and claim 57 depends from claim 51, each of which claims is a Group I claim. Accordingly, the present obviousness rejection of the Group IV claims should be reversed for at least the reasons explained above in connection with the Group I claims (see Section B2). In addition, claim 25, which is representative of the Group IV claims, is separately patentable and not obvious based on Phares, for reasons other than those discussed above in connection with the Group I claims, because claim 25 adds a limitation that the light generated by the LED system changes color over a period of time in response to external conditions.

Phares is completely silent with respect to this limitation; nowhere in the reference does Phares disclose or suggest that light generated by the lighting elements of Phares' system changes color over a period of time in response to external conditions. In contrast, Phares discloses only that the light elements respond to clock and data command signals that are provided to light element control units from a control system (Phares, Fig. 1; col. 2, lines 51-57). The control system that supplies these clock and data command signals includes a conventional computer such as an IBM PC (Phares, col. 2, lines 58-61). At no point does Phares remotely suggest that either of the clock and data command signals are derived in response to external conditions.

It is particularly noteworthy that in connection with the rejection of any of the Group IV claims (25, 26 and 57) over Phares, the Final Office Action makes absolutely no mention of the limitations specifically recited in these claims (i.e., "external conditions"). Rather, in connection with Phares, the Examiner merely lumps the rejections of the Group IV claims together with several other claims (e.g., the Group I claims) and says absolutely nothing specifically about the Group IV claims. Accordingly, the Examiner has failed to meet the examination requirements set forth at least in MPEP §706.02(j) by failing to specify the particular basis for rejection of these claims (e.g., the difference or differences in the claims over the applied reference, the

proposed modification of the applied reference necessary to arrive at the claimed subject matter, and an explanation why one of ordinary skill in the art would have been motivated to make the proposed modification).

For at least the foregoing reasons, the rejection of the Group IV claims over Phares is improper and should be reversed.

6. **The rejection of the Group V claims (45-48, 50, 63 and 65) should be reversed because Phares fails to disclose or suggest an article of clothing comprising an LED system including at least one LED, and a microprocessor that controls the at least one LED.**

Claim 45 is representative of the Group V claims, and is directed to an article of clothing comprising an LED system including at least one LED, and a microprocessor that controls the at least one LED. The Group V claims are separately patentable and not obvious over Phares, relative to the other claim groups. Phares does not disclose or suggest an article of clothing, nor does Phares disclose or suggest an LED system including at least one LED. Accordingly, for reasons similar to those discussed above, the rejection of the Group V claims over Phares is improper and should be reversed.

7. **The rejection of the Group VI claims (54, 61 and 62) should be reversed because Phares fails to disclose or suggest a pulse-width modulated signal, wherein an LED system is responsive to the pulse-width modulated signal.**

Each of the Group VI claims is a dependent claim; claim 54 depends from claim 51 (a Group I claim), claim 61 depends from claim 41 (a Group II claim), and claim 62 depends from claim 42 (a Group III claim). Accordingly, the present obviousness rejection of the Group VI claims should be reversed for at least the reasons explained above in connection with the Group I, II and III claims (see Sections B2, B3 and B4). In addition, claim 54, which is representative of the Group VI claims, is separately patentable and not obvious based on Phares, for reasons other than those discussed above in connection with the Group I, II and III claims, because claim 54 adds a limitation that the claimed LED system is responsive to a pulse-width modulated (PWM) signal.

Phares is completely silent with respect to this limitation; nowhere in the reference does Phares disclose or suggest that light generated by the lighting elements of Phares' system is at all

responsive to or controlled by one or more pulse-width modulated signals. In contrast, Phares explicitly discloses only that the light elements respond to analog signals provided by a digital-to-analog converter, as discussed above in Section B2 (Phares, col. 6, line 58 *et seq.*). At no point does Phares remotely suggest that pulse-width modulated signals are used to control the lighting elements in any way.

It is again particularly noteworthy that in connection with the rejection of any of the Group VI claims (54, 61 and 62) over Phares, the Final Office Action makes absolutely no mention of the limitations specifically recited in these claims (i.e., “pulse-width modulation”). Rather, in connection with Phares, the Examiner merely lumps the rejections of the Group VI claims together with several other claims (e.g., the Group I, II and III claims) and says absolutely nothing specifically about the Group VI claims. Accordingly, the Examiner again has failed to meet the examination requirements set forth at least in MPEP §706.02(j) by failing to specify the particular basis for rejection of these claims.

For at least the foregoing reasons, the rejection of the Group VI claims over Phares is improper and should be reversed.

- 8. The rejection of the Group VII claims (19, 21, 59 and 75) should be reversed because Phares fails to disclose or suggest an LED system, or varying the color of light generated by the LED system over a period of time so that an observer perceives a change in color associated with an object being affected by the generated light.**

Claim 75 is representative of the Group VII claims, and is directed to an illumination method, comprising acts of: providing an LED system to generate light of a range of colors within a color spectrum; placing the LED system to affect an object with the light, the object being selected from the group consisting of a display case, a vending machine, a beverage container, and an advertising display; generating the light so as to illuminate at least a portion of the object; and varying the color of the generated light over a period of time so that an observer perceives a change in color associated with the object being affected by the generated light due to a selective color interaction between the generated light and the object. The Group VII claims are separately patentable and not obvious over Phares, relative to the other claim groups, for the specific reasons set forth below.

Phares fails to disclose or suggest the illumination method of claim 75. In particular, nowhere in the reference does Phares remotely disclose or suggest varying a color of light generated by Phares' lighting system so that an observer perceives a change in color associated with an object being affected by the generated light due to a selective color interaction between the generated light and the object.

Again, the Final Office Action makes absolutely no mention of any claim limitations relating to a "selective color interaction between the generated light and the object," or "perceiving a change in color associated with an object being affected by generated light." Rather, in connection with Phares, as with the Group IV and Group VI claims, the Examiner merely lumps the rejections of the Group VII claims together with several other claims (e.g., the Group I, II and III claims) and says absolutely nothing specifically about the limitations recited in the Group VII claims. Accordingly, the Examiner again has failed to meet the examination requirements set forth at least in MPEP §706.02(j) by failing to specify the particular basis for rejection of these claims.

For at least the foregoing reasons, the rejection of the Group VII claims over Phares is improper and should be reversed.

- 9. The rejection of the Group VIII claims (20, 22, 23, 24, 60 and 76) should be reversed because Phares fails to disclose or suggest an LED system, or varying the color of light generated by the LED system over a period of time so that an observer perceives an illusion of motion in at least a portion of an object being affected by the generated light.**

Claim 76 is representative of the Group VIII claims, and is directed to an illumination method, comprising acts of: providing an LED system to generate light of a range of colors within a color spectrum; placing the LED system to affect an object with the light, the object being selected from the group consisting of a display case, a vending machine, a beverage container, and an advertising display; generating the light so as to illuminate the object; and varying the color of the generated light over a period of time so that an observer perceives an illusion of motion in at least a portion of the object being affected by the generated light due to a selective color interaction between the generated light and the object. The Group VIII claims are

separately patentable and not obvious over Phares, relative to the other claim groups, for the specific reasons set forth below.

Phares fails to disclose or suggest the illumination method of claim 76. In particular, nowhere in the reference does Phares remotely disclose or suggest varying a color of light generated by Phares' lighting system so that an observer perceives an illusion of motion in at least a portion of an object being affected by the generated light due to a selective color interaction between the generated light and the object.

Again, as with claim 75, the Final Office Action makes absolutely no mention in connection with the rejections over Phares of any claim limitations relating to a "selective color interaction between the generated light and the object," or "perceiving an illusion of motion associated with an object being affected by generated light." For at least the foregoing reasons, the rejection of the Group VIII claims over Phares is improper and should be reversed.

10. The rejection of the Group IX claims (66 and 67) should be reversed because Phares fails to disclose or suggest an LED system, or positioning a stencil or gobo between the LED system and a surface and projecting light from the LED system through the stencil or gobo onto the surface.

Claim 66 is representative of the Group IX claims, and is directed to a method for attracting attention from an observer. The method of claim 66 comprises acts of: providing an LED system to generate light of a range of colors within a color spectrum; positioning at least one object selected from the group consisting of a stencil and gobo between the LED system and a surface; and generating light so as to project light through the object onto the surface. The Group IX claims are separately patentable and not obvious over Phares, relative to the other claim groups, for the specific reasons set forth below.

Phares fails to disclose or suggest the illumination method of claim 66. In particular, nowhere in the reference does Phares remotely disclose or suggest an LED system, a stencil or a gobo, or projecting light generated by the LED system through a stencil or gobo onto a surface. Once again, in connection with the rejections over Phares, the Final Office Action makes absolutely no mention of any such claim limitations. For at least the foregoing reasons, the rejection of the Group IX claims over Phares is improper and should be reversed.

- 11. The rejection of the Group X claims (68, 69, 73 and 74) should be reversed because Phares fails to disclose or suggest an LED system, or placing an LED system to project light onto an object including a display case, a vending machine, a beverage container, or an advertising display such that an observer sees at least some light generated by the LED system indirectly via the object.**

Claim 68 is representative of the Group X claims, and is directed to a method for attracting attention from an observer. The method of claim 68 comprises acts of: providing an LED system to generate light of a range of colors within a color spectrum; placing the LED system to project the light, when generated, onto an object such that the observer sees at least some of the light substantially indirectly via the object, and not directly from the LED system, the object being selected from the group consisting of a display case, a vending machine, a beverage container, and an advertising display; and generating the light so as to illuminate the object.

Phares fails to disclose or suggest the illumination method of claim 68. In particular, nowhere in the reference does Phares remotely disclose or suggest an LED system, a display case, a vending machine, a beverage container, and an advertising display, or projecting light onto one of the foregoing objects such that an observer sees at least some of the light substantially indirectly via the object. As discussed above in connection with the Group I and Group II claims, again the Examiner applies his so-called "intended use" argument to reject claim 68, alleging that it would have been obvious to one of ordinary skill in the art to use Phares' invention to illuminate any object directly or indirectly. The Examiner has no factual or legal basis in support of this argument. Accordingly, for reasons similar to those discussed above in connection with the Group I and Group II claims, the rejection of the Group X claims (68, 69, 73 and 74) under 35 U.S.C. § 103(a) as allegedly being obvious over Phares should be reversed.

- 12. The rejection of the Group XI claims (64) should be reversed because Phares fails to disclose or suggest an LED that is adapted to emit light at two or more wavelengths.**

Claim 64 is the only Group XI claim, and depends from claim 45, which is a Group V claim. Accordingly, the present obviousness rejection of the Group XI claims should be reversed for at least the reasons explained above in connection with the Group V claims (see Section B6). In addition, claim 64 is separately patentable and not obvious based on Phares, for reasons other

than those discussed above in connection with the Group V claims, because claim 64 adds a limitation that the claimed LED system includes at least one LED that is adapted to emit light at two or more wavelengths.

Phares is completely silent with respect to this limitation, and again the Final Office Action makes absolutely no mention of this limitation in connection with the rejection of claim 64 over Phares. For at least the foregoing reasons, the rejection of the Group XI claims over Phares is improper and should be reversed.

C. The claim rejections over Strite should be reversed.

As discussed above in Section A, at least one element of each of Applicant's claims is entirely missing from Strite. Furthermore, the Examiner has not pointed to any specific motivation or suggestion in the prior art to modify Strite to provide the missing element(s). Moreover, the Examiner has failed to specifically identify in the prior art any reasonable expectation of success in making any such modifications to Strite.

1. Discussion of the Strite reference

Strite is directed to a semiconductor fabrication solution to provide a monolithic array of light-emitting diodes (LEDs) for the generation of light at multiple wavelengths. Strite's entire focus and target application for such monolithic arrays of LEDs is limited to LED display panels (e.g., for computers, televisions, etc.); Strite does not discuss or address in any manner a single application for the disclosed LED arrays other than for display purposes.

Accordingly, Strite makes absolutely no mention or suggestion that the disclosed LED arrays may be used to illuminate other objects, or may be used in combination with other objects (e.g., beverage containers, vending machines, articles of clothing, retail arrangements for food, clothing or other merchandise, etc.). Instead, Strite merely indicates that in the technical world, "displays have an important function as human interfaces for making abstract information available through visualization," and that the monolithic LED arrays disclosed in Strite facilitate the production of multicolor LED flat panel displays (Strite, col. 1, lines 13-15; col. 3, line 50 - col. 4, line 23; col. 8, lines 38-57).

The basic idea behind Strite is completely focused on semiconductor fabrication methods, and how particular semiconductor materials can be modified by doping to provide desired

electroluminescence characteristics that facilitate the fabrication of monolithic multicolor LED arrays (Strite, col. 9, lines 21-39). A quick glance at each of Strite's figures verifies that the disclosure is entirely directed to semiconductor fabrication methods to produce arrays of multicolor LEDs for display purposes. In summarizing the disclosure, Strite provides an example in Fig. 8 of a complete display device including a monolithic LED array as discussed throughout the specification, including various other conventional elements (e.g. a processor and control electronics) used to drive the LED array (Strite, col. 22, lines 3-28).

In sum, the teachings of Strite are limited to a semiconductor monolithic array of LEDs for use in a display device. Nowhere in the reference does Strite disclose or suggest that the LED array is designed for, or capable of, illuminating (e.g. projecting light of sufficient brightness onto) another object or otherwise interacting with another object in any way (e.g. such that an observer senses a generated light indirectly via the object rather than directly from the LED array).

2. The rejection of the Group I claims (1, 2, 8, 9, 14, 15-18, 51-53, 56, 58 and 72) should be reversed because Strite fails to disclose or suggest a retail display or any method of attracting attention to a retail display by projecting light from an LED system onto the retail display.

As discussed above in Section B2, claim 1 is representative of the Group I claims. The Group I claims are separately patentable and not obvious over Strite, relative to the other claim groups, for the specific reasons set forth below.

As with Phares, the Examiner concedes in the Final Office Action in connection with claim 1 that Strite "fails to explicitly disclose the claimed object which is affected or illuminated by his lighting system or locate the system [sic] on the claimed object." (e.g., illuminating a retail display) (Final Office Action, page 5, item 3 ¶3). However, the Examiner again attempts to apply his so-called "intended use" argument to support an obviousness rejection of claim 1 over Strite, notwithstanding the complete absence of retail displays in any of the references of record.

In particular, the Examiner points to no specific suggestion or motivation whatsoever in the prior art to modify Strite in any manner; instead, the Examiner merely makes the sweeping assertion that allegedly it is obvious to use the lighting system of Strite "to illuminate directly or indirectly *any* desired objects (e.g., retail display...) or locate it [sic] on *any* desired objects." Id.

However, the Examiner does not point to a single prior art reference that mentions the illumination of a retail display or any other object in any manner.

The Examiner further suggests that one would be inclined to use Strite to illuminate *any* object, including a retail display, “in order to provide abstract information through visualization.” *Id.* Here, the Examiner merely has lifted a phrase out of Strite which makes absolutely no sense in the present context. As discussed above in Section C1, Strite mentions that “displays have an important function as human interfaces for making abstract information available through visualization.” (Strite, col. 1, lines 13-15). Again, Strite refers exclusively to graphic displays used for computers, televisions, and the like. The Examiner merely has lifted this phrase out of context to allegedly provide motivation to modify Strite so as to illuminate any object, including a retail display.

As with Phares, the Examiner clearly is using hindsight impermissibly in formulating his so-called “intended use” argument with respect to Strite. Specifically, the Examiner uses Applicants’ own disclosure (e.g., by pointing to the illuminated objects discussed therein, such as a retail display) in an attempt to establish the motivation to modify Strite. As discussed above, this clearly is prohibited by Federal Circuit case law and the MPEP.

In sum, Strite fails to disclose or suggest a retail display, or using Strites’ LED array to illuminate a retail display. The Examiner has failed to identify a specific motivation or suggestion in the prior art to modify Strite to include all of the missing features required by claim 1, and further has failed to identify any reasonable expectation of success in modifying Strite to include these features. For at least the foregoing reasons, the rejection of the Group I claims (1, 2, 8, 9, 14, 15 through 18, 51 through 53, 56, 58 and 72) under 35 U.S.C. § 103(a) as allegedly being obvious over Strite should be reversed.

3. The rejection of the Group II claims (10-13, 41 and 71) should be reversed because Strite fails to disclose or suggest a container containing a liquid and illuminated from the inside by light generated by at least one LED.

As discussed above in Section B3, claim 41 is representative of the Group II claims. The Group II claims are separately patentable and not obvious over Strite, relative to the other claim groups, for the specific reasons set forth below.

Claim 41 recites, *inter alia*, an apparatus that includes a non-opaque container containing a non-opaque liquid and arranged such that the non-opaque container is illuminated from the inside by light generated by at least one LED. Strite neither discloses nor suggests these features. Again, there is no disclosure or suggestion whatsoever in Strite, or in any other reference of record, that would lead one of ordinary skill to consider using the LED array of Strite in connection with a non-opaque container containing a non-opaque liquid.

As with the Group I claims discussed above, the Examiner awkwardly applies his so-called “intended use” argument to claim 41, alleging that although Strite fails to explicitly disclose a non-opaque container, it would have been obvious to one of ordinary skill in the art to use Strite’s invention to illuminate *any* desired object directly or indirectly. (Final Office Action, page 7 ¶1; emphasis added). Again, such a sweeping assertion by the Examiner constitutes a legally flawed argument in support of an obvious rejection.

For at least the foregoing reasons, the rejection of the Group II claims (10 through 13, 41 and 71) under 35 U.S.C. § 103(a) as allegedly being obvious over Strite should be reversed.

4. The rejection of the Group III claims (42 and 70) should be reversed because Strite fails to disclose or suggest a vending machine and an illumination system disposed within the vending machine for illuminating the vending machine, wherein the illumination system comprises at least one LED.

As discussed above in Section B4, claim 42 is representative of the Group III claims. The Group III claims are separately patentable and not obvious over Strite, relative to the other claim groups, for the specific reasons set forth below.

Claim 42 recites, *inter alia*, an apparatus comprising a vending machine and illumination system disposed within the vending machine for illuminating the vending machine. The illumination system recited in claim 42 comprises at least one LED. Strite fails to disclose or suggest a vending machine and an illumination system disposed within the vending machine for illuminating the vending machine, wherein the illumination system comprises at least one LED, as recited in claim 42. As discussed above in connection with the Group I and Group II claims, again the Examiner applies his so-called “intended use” argument to reject claim 42, alleging that it would have been obvious to one of ordinary skill in the art to use Strite’s invention to illuminate any object directly or indirectly. The Examiner has no factual or legal basis in support

of this argument; neither Strite nor any other reference of record remotely refers to a vending machine or an LED-based illumination system disposed in a vending machine. Accordingly, for reasons similar to those discussed above in connection with the Group I and Group II claims, the rejection of the Group III claims (42 and 70) under 35 U.S.C. § 103(a) as allegedly being obvious over Strite should be reversed.

5. The rejection of the Group IV claims (25, 26 and 57) should be reversed because Strite fails to disclose or suggest changing the color of light generated by an LED or an LED system over a period of time in response to external conditions.

As discussed above in Section B5, each of the Group IV claims is a dependent claim that depends from one of the Group I claims; accordingly, the present obviousness rejection of the Group IV claims over Strite should be reversed for at least the reasons explained above in connection with the Group I claims (see Section C2). In addition, claim 25, which is representative of the Group IV claims, is separately patentable and not obvious based on Strite, for reasons other than those discussed above in connection with the Group I claims, because claim 25 adds a limitation that the light generated by the LED system changes color over a period of time in response to external conditions.

Strite is completely silent with respect to this limitation; nowhere in the reference does Strite disclose or suggest that light generated by Strite's LED array changes color over a period of time in response to external conditions. On page 6 ¶4 of the Final Office Action, the Examiner alleges that "Strite discloses an interface (95) as an external transmitter providing external conditions." To the extent this statement can be understood, such an allegation has absolutely no basis in the reference. Strite merely discloses, in connection with Strite's Fig. 8, that a display device incorporating the disclosed monolithic LED array may include "an interface 95 for receiving image data to be displayed." (Strite, col. 22, lines 12-13). This is the first and only time Strite makes any mention of such an interface. This disclosure hardly teaches or suggests anything to do whatsoever with the concept of changing a color of light generated by an LED system over a period of time in response to external conditions.

For at least the foregoing reasons, the rejection of the Group IV claims over Strite is improper and should be reversed.

6. **The rejection of the Group V claims (45-48, 50, 63 and 65) should be reversed because Strite fails to disclose or suggest an article of clothing comprising an LED system including at least one LED, and a microprocessor that controls the at least one LED.**

Claim 45 is representative of the Group V claims, and is directed to an article of clothing comprising an LED system including at least one LED, and a microprocessor that controls the at least one LED. The Group V claims are separately patentable and not obvious over Strite, relative to the other claim groups. Strite does not disclose or suggest an article of clothing, nor does Strite disclose or suggest an LED system including at least one LED. Accordingly, for reasons similar to those discussed above, the rejection of the Group V claims over Strite is improper and should be reversed.

7. **The rejection of the Group VI claims (54, 61 and 62) should be reversed because Strite fails to disclose or suggest a pulse-width modulated signal, wherein an LED system is responsive to the pulse-width modulated signal.**

As discussed above in Section B7, each of the Group VI claims is a dependent claim; claim 54 depends from claim 51 (a Group I claim), claim 61 depends from claim 41 (a Group II claim), and claim 62 depends from claim 42 (a Group III claim). Accordingly, the present obviousness rejection of the Group VI claims over Strite should be reversed for at least the reasons explained above in connection with the Group I, II and III claims (see Sections C2, C3 and C4). In addition, claim 54, which is representative of the Group VI claims, is separately patentable and not obvious based on Strite, for reasons other than those discussed above in connection with the Group I, II and III claims, because claim 54 adds a limitation that the claimed LED system is responsive to a pulse-width modulated (PWM) signal.

On page 8 ¶2, the Examiner alleges in the Final Office Action that Strite “discloses activation signal [sic] including pulse modulated signal (from pulse generator 99), an intensity of a color of the LED system being responsive to a duty cycle of the pulse width modulated signal,” referring to Fig. 8 and col. 22, lines 10-28 of Strite. In the cited passage, however, Strite merely discloses that a display device for the monolithic LED array may include a pulse generator “for biasing the LEDs in a pulsed mode; such a pulsed mode is useful for x-y addressing, where individual pixels are subsequently addressed, for gray-scale processing by adopting pulse

lengths, pulse heights, and/or repetition rates of applied pulses.” (Strite, col. 22, lines 21-25).

Thus, Strite makes no explicit mention of pulse-width modulated signals, and certainly does not say anything about an intensity of a color of the LED system being responsive to a duty cycle of a pulse width modulated signal, as alleged by the Examiner. Rather, Strite merely vaguely refers to some advantages afforded by a pulse generator relating to addressing and gray-scale processing in an LED display device.

For at least the foregoing reasons, the rejection of the Group VI claims over Strite is improper and should be reversed.

- 8. The rejection of the Group VII claims (19, 21, 59 and 75) should be reversed because Strite fails to disclose or suggest varying the color of light generated by the LED system over a period of time so that an observer perceives a change in color associated with an object being affected by the generated light.**

As discussed above in Section B8, claim 75 is representative of the Group VII claims, and is directed to an illumination method, comprising acts of: providing an LED system to generate light of a range of colors within a color spectrum; placing the LED system to affect an object with the light, the object being selected from the group consisting of a display case, a vending machine, a beverage container, and an advertising display; generating the light so as to illuminate at least a portion of the object; and varying the color of the generated light over a period of time so that an observer perceives a change in color associated with the object being affected by the generated light due to a selective color interaction between the generated light and the object. The Group VII claims are separately patentable and not obvious over Strite, relative to the other claim groups, for the specific reasons set forth below.

Strite fails to disclose or suggest the illumination method of claim 75. In particular, nowhere in the reference does Strite remotely disclose or suggest varying a color of light generated by Strite’s LED array so that an observer perceives a change in color associated with an object being affected by the generated light due to a selective color interaction between the generated light and the object.

Again, the Final Office Action makes absolutely no mention of any claim limitations relating to a “selective color interaction between the generated light and the object,” or “perceiving a change in color associated with an object being affected by generated light.”

Rather, in connection with Strite, as with the Group IV and Group VI claims, the Examiner merely lumps the rejections of the Group VII claims together with several other claims (e.g., the Group I, II and III claims) and says absolutely nothing specifically about the limitations recited in the Group VII claims. Accordingly, the Examiner again has failed to meet the examination requirements set forth at least in MPEP §706.02(j) by failing to specify the particular basis for rejection of these claims.

For at least the foregoing reasons, the rejection of the Group VII claims over Strite is improper and should be reversed.

- 9. The rejection of the Group VIII claims (20, 22, 23, 24, 60 and 76) should be reversed because Strite fails to disclose or suggest varying the color of light generated by the LED system over a period of time so that an observer perceives an illusion of motion in at least a portion of an object being affected by the generated light.**

As discussed above in Section B9, claim 76 is representative of the Group VIII claims, and is directed to an illumination method, comprising acts of: providing an LED system to generate light of a range of colors within a color spectrum; placing the LED system to affect an object with the light, the object being selected from the group consisting of a display case, a vending machine, a beverage container, and an advertising display; generating the light so as to illuminate the object; and varying the color of the generated light over a period of time so that an observer perceives an illusion of motion in at least a portion of the object being affected by the generated light due to a selective color interaction between the generated light and the object. The Group VIII claims are separately patentable and not obvious over Strite, relative to the other claim groups, for the specific reasons set forth below.

Strite fails to disclose or suggest the illumination method of claim 76. In particular, nowhere in the reference does Strite remotely disclose or suggest varying a color of light generated by Strite's LED array so that an observer perceives an illusion of motion in at least a portion of an object being affected by the generated light due to a selective color interaction between the generated light and the object.

Although the Examiner again improperly discusses the rejection of claim 76 over Strite in connection with rejections of other claim groups without specifically addressing claim 76, the Examiner does mention the limitation of "illusion of motion" in connection with claims 19, 20,

22 and 60 on page 6 ¶2 of the Final Office Action. However, the Examiner's statements in this regard have no sensible applicability to the claims in question.

In particular, the Examiner contends that "Strite discloses his invention can provide an illusion of motion (See Col. 1, lines 50+ to Col. 2, lines +23)." (Final Office Action, page 6 ¶2). Not only is this statement irrelevant to the claims in question as it does not correctly recite the limitation at issue in these claims, but the Examiner's statement is wholly nonsensical in the context of Strite's discussion in the cited passages.

In the cited passage, Strite discusses certain drawbacks of liquid crystal displays (LCDs) – not LEDs – relating to high resolution graphics. Specifically, Strite states that "many applications such as high resolution graphics or full motion video require high resolution....in these cases, LCD technology has drawbacks." (Strite, col. 1, lines 55-58). Strite goes on to say that "[t]oday, the active matrix addressing makes possible brilliant full color displays capable of graphics with reasonable resolution or full motion video. However, large flat panel LCDs with active matrix addressing are expensive due to the costs of the fabrication of the transistor matrix array." (Strite, col. 2, lines 8-12).

Hence, although Strite indeed uses the word "motion" on at least two occasions in the cited passages, these passages have nothing to do with varying a color of light generated by Strite's LED array so that an observer perceives an illusion of motion in at least a portion of an object being affected by the generated light due to a selective color interaction between the generated light and the object, as required by claim 76. Accordingly, the Examiner's reliance on the cited passages of Strite (and the Strite reference as a whole) to reject claim 76 is improper. For at least the foregoing reasons, the rejection of the Group VIII claims over Strite should be reversed.

10. The rejection of the Group IX claims (66 and 67) should be reversed because Strite fails to disclose or suggest positioning a stencil or gobo between an LED system and a surface and projecting light from the LED system through the stencil or gobo onto the surface.

As discussed above in Section B10, claim 66 is representative of the Group IX claims, and is directed to a method for attracting attention from an observer. The method of claim 66 comprises acts of: providing an LED system to generate light of a range of colors within a color

spectrum; positioning at least one object selected from the group consisting of a stencil and gobo between the LED system and a surface; and generating light so as to project light through the object onto the surface. The Group IX claims are separately patentable and not obvious over Strite, relative to the other claim groups, for the specific reasons set forth below.

Strite fails to disclose or suggest the illumination method of claim 66. In particular, nowhere in the reference does Strite remotely disclose or suggest a stencil or a gobo, or projecting light generated by an LED system through a stencil or gobo onto a surface. Once again, in connection with the rejections over Strite of claim 66, the Examiner attempts to apply his so-called "intended use" argument to support a rejection of claims reciting the limitations of a stencil or a gobo. As discussed above in connection with at least the Group I claims, this approach to supporting an obviousness rejection is improper. For at least the foregoing reasons, the rejection of the Group IX claims over Strite should be reversed.

11. The rejection of the Group X claims (68, 69, 73 and 74) should be reversed because Strite fails to disclose or suggest placing an LED system to project light onto an object including a display case, a vending machine, a beverage container, or an advertising display such that an observer sees at least some light generated by the LED system indirectly via the object.

As discussed above in Section B11, claim 68 is representative of the Group X claims, and is directed to a method for attracting attention from an observer. The method of claim 68 comprises acts of: providing an LED system to generate light of a range of colors within a color spectrum; placing the LED system to project the light, when generated, onto an object such that the observer sees at least some of the light substantially indirectly via the object, and not directly from the LED system, the object being selected from the group consisting of a display case, a vending machine, a beverage container, and an advertising display; and generating the light so as to illuminate the object.

Strite fails to disclose or suggest the illumination method of claim 68. In particular, nowhere in the reference does Strite remotely disclose or suggest a display case, a vending machine, a beverage container, and an advertising display, or projecting light onto one of the foregoing objects such that an observer sees at least some of the light substantially indirectly via the object. As discussed above in connection with the Group I and Group II claims, again the

Examiner applies his so-called "intended use" argument to reject claim 68, alleging that it would have been obvious to one of ordinary skill in the art to use Strite's invention to illuminate any object directly or indirectly. The Examiner has no factual or legal basis in support of this argument. Accordingly, for reasons similar to those discussed above in connection with the Group I and Group II claims, the rejection of the Group X claims (68, 69, 73 and 74) as allegedly being obvious over Strite should be reversed.

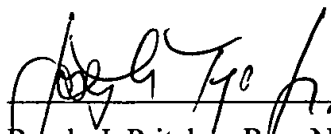
12. The rejection of the Group XI claims (64) over Strite should be reversed for reasons similar to those discussed in connection with the Group V claims.

As discussed above in Section B12, claim 64 is the only Group XI claim, and depends from claim 45, which is a Group V claim. Accordingly, the present obviousness rejection over Strite of the Group XI claims should be reversed for at least the reasons explained above in connection with the Group V claims (see Section C6).

IX. Conclusion

For the foregoing reasons, each of the rejections of the claims was improper and should be reversed.

Respectfully submitted,



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Attorney Docket No.: C01104/70049
Dated: April 3, 2003

X. Appendix: Claims as Appealed (37 C.F.R. §1.192(c)(9))

1. A method for attracting attention from an observer to a retail display, the method comprising acts of:

providing an LED system to generate light of a range of colors within a color spectrum;
placing the LED system to project the light, when generated, onto the retail display such that the observer sees at least some of the light substantially indirectly via the retail display, and not directly from the LED system; and
generating the light so as to illuminate the retail display.

2. The method of claim 1, further including an act of providing a processor for controlling an amount of electrical current supplied to the LED system, so that a particular amount of current supplied thereto generates light of a corresponding color within the color spectrum.

Claims 3-7 have been cancelled.

8. The method of claim 2, wherein the act of placing includes positioning the LED system to affect a non-opaque object within the retail display.

9. The method of claim 8, wherein the retail display is substantially transparent and comprises glass, ice, crystal, or plastic.

10. The method of claim 8, wherein the act of placing includes positioning the LED system to affect a non-opaque container within the retail display, the non-opaque container containing a non-opaque substance.

11. The method of claim 10, wherein the container and the substance are substantially transparent.

12. The method of claim 10, wherein the container is a beverage container and the substance is a beverage.
13. The method of claim 10, wherein positioning includes disposing the LED system on a coaster holding the object.
14. The method of claim 2, wherein the act of placing includes positioning the LED system to affect a display sign within the retail display.
15. The method of claim 2, wherein the act of placing includes positioning the LED system to affect an informational board within the retail display.
16. The method of claim 15, wherein the informational board is selected from the group consisting of traffic information signs, silent radios, scoreboards, price boards, and advertisement boards.
17. The method of claim 2, wherein the generated light changes color over time.
18. The method of claim 2, wherein the generated light maintains a constant color.
19. The method of claim 2, further comprising an act of varying the color of the generated light over a period of time so that the observer perceives a change in color of the retail display being affected by the generated light.
20. The method of claim 2, further comprising an act of varying the color of the generated light over a period of time so that the observer perceives an illusion of motion in a design on the retail display being affected by the generated light.

21. The method of claim 19 or 20, wherein the retail display is at least one of a picture, photograph, image, display sign, informational board, or advertisement display.

22. The method of claim 2, wherein the generated light changes color over a period of time so as to permit an observer to perceive an illusion of motion of the retail display being affected by the generated light.

23. The method of claim 19, 20, or 22, wherein the retail display being affected by the light comprises at least one display used for advertising purposes.

24. The method of claim 19, 20, or 22, wherein the generated light changes color over a period of time in a pre-programmed sequence.

25. The method of claim 19, 20, or 22, wherein the generated light changes color over a period of time in response to external conditions.

26. The method of claim 25, wherein the external conditions represent at least one of proximity of people, ambient light, time of day, and location.

Claims 27-40 have been cancelled.

41. An apparatus, comprising:
at least one LED;
an addressable controller having an alterable address, the controller having a signal generator to generate control signals to control light emitted by the at least one LED;
a receiver coupled to the addressable controller to receive data corresponding to the alterable address and indicative of the light to be emitted by the at least one LED; and
a non-opaque container containing a non-opaque liquid and arranged such that the non-opaque container is illuminated from the inside by the light generated by the at least one LED.

42. An apparatus, comprising:
a vending machine and an illumination system disposed within the vending machine for illuminating the vending machine, the illumination system comprising:
at least one LED;
an addressable controller having an alterable address, the controller having a signal generator to generate control signals to control light emitted by the at least one LED; and
a receiver coupled to the addressable controller to receive data corresponding to the alterable address and indicative of the light to be emitted by the at least one LED.

Claims 43-44 have been cancelled.

45. An article of clothing comprising an LED system including at least one LED, and a microprocessor that controls the at least one LED.

46. The article of clothing of claim 45, further comprising a sensor.

47. The article of clothing of claim 45, wherein the article of clothing is capable of recording data and replaying the recorded data.

48. The article of clothing of claim 45, further comprising a receiver for receiving data transmitted from an external transmitter.

Claim 49 has been cancelled.

50. The article of clothing of claim 45, wherein the LED system is capable of displaying a programmable lighting effect.

51. A method for illuminating a retail display, comprising acts of:
providing an LED system that generates light of a range of colors within a color spectrum in response to an activation signal;
directing the light toward the retail display; and
controlling the activation signal to vary the range of colors of the light over time,
whereby the retail display is affected with color-changing illumination.

52. The method of claim 51 wherein the LED system includes at least one red LED, at least one blue LED, and at least one green LED.

53. The method of claim 51 wherein the LED system comprises a plurality of LEDs having a plurality of colors, a processor that receives inputs and controls the activation signal in response to the received inputs.

54. The method of claim 51 wherein the activation signal includes a pulse-width modulated signal, an intensity of a color of the LED system being responsive to a duty cycle of the pulse-width modulated signal.

Claim 55 has been cancelled.

56. The method of claim 51 wherein the activation signal is controlled in response to a user input.

57. The method of claim 51 wherein the activation signal is controlled in response to an external condition.

58. The method of claim 1, wherein the act of providing includes providing an LED system comprising a plurality of LEDs and an addressable controller for controlling light generated by the plurality of LEDs.

59. The method of claim 1, wherein the retail display comprises more than one color, and wherein the method further comprises an act of varying the color of the generated light over a period of time so that the observer perceives a change in color of the retail display being affected by the generated light.

60. The method of claim 1, wherein the retail display comprises more than one color, and wherein the method further comprises an act of varying the color of the generated light over a period of time so that the observer perceives an illusion of motion in a design on the retail display being affected by the generated light.

61. The apparatus of claim 41, wherein the controller generates the control signals as pulse width modulated control signals so that the light emitted by the at least one LED is emitted for portions of timing cycles.

62. The vending machine of claim 42, wherein the controller generates the control signals as pulse width modulated control signals so that the light emitted by the at least one LED is emitted for portions of timing cycles.

63. The article of clothing of claim 45, wherein the LED system includes LEDs of at least two different colors.

64. The article of clothing of claim 45, wherein the LED system includes at least one LED that is adapted to emit light at two or more wavelengths.

65. The article of clothing of claim 45, wherein the microprocessor controls the LED system to generate one or more illumination patterns.

66. A method for attracting attention from an observer, the method comprising acts of:

providing an LED system to generate light of a range of colors within a color spectrum;
positioning at least one object selected from the group consisting of a stencil and gobo between the LED system and a surface; and
generating light so as to project light through the object onto the surface.

67. The method of claim 66, wherein the act of providing includes providing an LED system comprising a plurality of LEDs and an addressable controller for controlling light generated by the plurality of LEDs.

68. A method for attracting attention from an observer, the method comprising acts of:

providing an LED system to generate light of a range of colors within a color spectrum;
placing the LED system to project the light, when generated, onto an object such that the observer sees at least some of the light substantially indirectly via the object, and not directly from the LED system, the object being selected from the group consisting of a display case, a vending machine, a beverage container, and an advertising display; and
generating the light so as to illuminate the object.

69. The method of claim 68, wherein the object is a display case.

70. The method of claim 68, wherein the object is a vending machine.

71. The method of claim 68, wherein the object is a beverage container.

72. The method of claim 68, wherein the object is an advertising display.

73. The method of claim 68, wherein the act of providing includes providing an LED system comprising a plurality of LEDs and an addressable controller for controlling light generated by the plurality of LEDs.

74. An illumination method, comprising acts of:
providing an LED system to generate light of a range of colors within a color spectrum;
and
placing the LED system to project the light, when generated, onto an object so as to illuminate the object, the object being selected from the group consisting of a display case, a vending machine, a beverage container, and an advertising display, the LED system being positioned such that at least some of the projected light, upon illumination of the object, is directed to an observer so that the observer sees at least some of the projected light substantially indirectly via the object, and not directly from the LED system.

75. An illumination method, comprising acts of:
providing an LED system to generate light of a range of colors within a color spectrum;
placing the LED system to affect an object with the light, the object being selected from the group consisting of a display case, a vending machine, a beverage container, and an advertising display;
generating the light so as to illuminate at least a portion of the object; and
varying the color of the generated light over a period of time so that an observer perceives a change in color associated with the object being affected by the generated light due to a selective color interaction between the generated light and the object.

76. An illumination method, comprising acts of:
providing an LED system to generate light of a range of colors within a color spectrum;
placing the LED system to affect an object with the light, the object being selected from the group consisting of a display case, a vending machine, a beverage container, and an advertising display;

generating the light so as to illuminate the object; and
varying the color of the generated light over a period of time so that the observer
perceives an illusion of motion in at least a portion of the object being affected by the generated
light due to a selective color interaction between the generated light and the object.

chaft Kohle, M.E.H. v. Shell Oil Co., 112 F.3d 1561, 1564, 42 USPQ2d 1674, 1677 (Fed.Cir.1997). Zebco posits that if the '835 patent is not entitled to the June, 1990 filing date of the '586 application, then the invention of the '835 patent was on-sale or in public use more than one year before the July 1992 filing date of the '254 application, which matured into the '835 patent.² However, Zebco does not contend that the applicant impermissibly added new matter to the '254 application. Cf. 35 U.S.C. § 132 (1994) ("No amendment shall introduce new matter into the disclosure of the invention."). Further, there is no dispute that the disclosures of the '586 and '254 applications—and thus the '324 and '835 patents, respectively—are the same in all but a few respects.³ Zebco's position thus reduces to the argument that the claims of the '835 patent violate the written description requirement of section 112, ¶ 1. But to state the argument is to realize its objection; as we discussed above, the written description of the '835 patent provides ample support for the ordinary and accustomed meaning of the terms of the '835 claims. Thus, the '835 claims, as construed by the district court and this court, are entitled to the benefit of the filing date of the '586 application. No violation of section 102(b)'s on-sale bar has occurred.

IV

Zebco has failed to demonstrate to this court that the disputed claim terms of claim 1 of the '835 patent should be interpreted in a way other than their ordinary and accustomed meaning. Therefore, we find that the district court's claim interpretation, and the summary judgment of infringement conditioned thereon, was not erroneous. We also hold that the district court correctly determined that the relevant claim of the '835 patent, as construed,

2. Johnson does not dispute that products embodying the '835 invention were on sale more than one year prior to the filing of the '254 application in July 1992.

is not invalid. The judgment of the district court is affirmed.

AFFIRMED.



In re Anita DEMBICZAK and Benson Zinbarg, Appellants.

No. 98-1498.

United States Court of Appeals,
Federal Circuit.

April 28, 1999.

Board of Patent Appeals and Interferences upheld rejection of application for utility patent, and appeal was taken. The United States Court of Appeals for the Federal Circuit, Clevenger, Circuit Judge, held that: (1) Board erred by rejecting application for patent on plastic trash bags with pumpkin face on grounds of obviousness, without finding suggestion, teaching, or motivation to combine prior art references, and (2) applicant's earlier design patents involving pumpkin faces on bags did not preclude issuance of patent in present case, under obviousness-type double patenting doctrine.

Reversed.

1. Patents \Rightarrow 113(6)

Federal Circuit determines legal question of obviousness of patent without deference to Board of Patent Appeals and Interferences, and examines any factual findings for clear error. 35 U.S.C.A. § 103(a).

3. The titles and abstracts are different, for example.

Cite as 175 F.3d 994 (Fed. Cir. 1999)

2. Patents \Rightarrow 16(1)

Measuring a claimed invention for obviousness requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. 35 U.S.C.A. § 103(a).

3. Patents \Rightarrow 16(4)

Best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis of a patent application is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. 35 U.S.C.A. § 103(a).

4. Patents \Rightarrow 26(1)

Evidence of a suggestion, teaching, or motivation to combine prior art references, sufficient to render invention obvious and unpatentable, may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. 35 U.S.C.A. § 103(a).

5. Patents \Rightarrow 36(1)

Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence sufficient to render invention obvious and unpatentable. 35 U.S.C.A. § 103(a).

6. Patents \Rightarrow 16.27

Board of Patent Appeals and Interferences erred by denying for obviousness application for utility patent for orange colored plastic trash bag with markings, which expanded to show face of pumpkin when filled with leaves, when Board cited prior art showing placement of pumpkin faces on crepe paper and which disclosed features of plastic trash bags and concluded that prior art references collectively described all limitations of present claims; Board should have found a suggestion, teaching, or motivation to combine prior art references. 35 U.S.C.A. § 103(a).

7. Patents \Rightarrow 113(6)

Federal Circuit would not consider argument made in support of obviousness of patent application, which was not raised before Board of Patent Appeals and Interferences. 35 U.S.C.A. § 103(a).

8. Patents \Rightarrow 120

The doctrine of "obviousness-type double patenting" prohibits claims in a second patent which define merely an obvious variation of an invention claimed by the same inventor in an earlier patent. 35 U.S.C.A. § 103(a).

See publication Words and Phrases for other judicial constructions and definitions.

9. Patents \Rightarrow 314(5)

Question whether patent application is to be rejected, under obviousness-type double patenting doctrine, on grounds that claimed invention was merely an obvious variation on invention disclosed in existing patent, is one of law, which Federal Circuit reviews de novo. 35 U.S.C.A. § 103(a).

10. Patents \Rightarrow 120

In some very rare cases, obviousness-type double patenting, in which invention claimed in patent application was obvious variation on invention disclosed by existing patent, may be found between design and utility patents. 35 U.S.C.A. § 103(a).

11. Patents \Rightarrow 120

When utility patent is sought to be invalidated due to obviousness, in light of previous design patents, rejection under obviousness-type double patenting doctrine is appropriate only if the claims of the two patents cross-read, meaning that the test is whether the subject matter of the claims of the patent sought to be invalidated would have been obvious from the subject matter of the claims of the other patent, and vice versa. 35 U.S.C.A. § 103(a).

12. Patents \Rightarrow 28

In order for a design to be unpatentable because of obviousness, there must first be a basic design reference in the

Cite as 175 F.3d 994 (Fed. Cir. 1999)

prior art, the design characteristics of which are basically the same as the claimed design. 35 U.S.C.A. § 103(a).

13. Patents \in 120

Phrase "having facial indicia thereon," contained in claim of application for utility patent on plastic trash bag with pumpkin face, was not design reference that was basically the same as claimed design covered by design patents on jack-o'-lantern faces on bags, and application was consequently not required to be rejected under obviousness-type double patenting doctrine. 35 U.S.C.A. § 103(a).

David P. Gordon, of Stamford, Connecticut, argued for appellant. Of counsel was Thomas A. Gallagher, of Stamford, Connecticut.

John M. Whealan, Associate Solicitor, Office of the Solicitor, of Arlington, Virginia, argued for appellee. With him on the brief were Albin F. Drost, Acting Solicitor, and David R. Nicholson, Associate Solicitor.

Before MAYER, Chief Judge, MICHEL and CLEVENGER, Circuit Judges.

CLEVENGER, Circuit Judge.

Anita Dembiczak and Benson Zinbarg appeal the rejection, upheld by the Board of Patent Appeals and Interferences, of all pending claims in their Application No. 08/427,732. See *Ex Parte Dembiczak*, No. 96-2648, slip op. at 43 (May 14, 1998). Because the Board erred in sustaining rejections of the pending claims as obvious under 35 U.S.C. § 103(a) (Supp.1998), and for obviousness-type double patenting, we reverse.

I

The invention at issue in this case is, generally speaking, a large trash bag made of orange plastic and decorated with lines and facial features, allowing the bag, when filled with trash or leaves, to resemble a Halloween-style pumpkin, or jack-o'-lan-

tern. As the inventors, Anita Dembiczak and Benson Zinbarg (collectively, "Dembiczak"), note, the invention solves the long-standing problem of unsightly trash bags placed on the curbs of America, and, by fortuitous happenstance, allows users to express their whimsical or festive nature while properly storing garbage, leaves, or other household debris awaiting collection. Embodiments of the invention—sold under a variety of names, including Giant Stuff-A-Pumpkin, Funkins, Jack Sak, and Bag-O-Fun—have undisputedly been well-received by consumers, who bought more than seven million units in 1990 alone. Indeed, in 1990, the popularity of the pumpkin bags engendered a rash of thefts around Houston, Texas, leading some owners to resort to preventative measures, such as greasing the bags with petroleum jelly and tying them to trees. See R. Piller, "Halloween Hopes Die on the Vine," *Hous. Chron.*, Oct. 19, 1990, at 13A.

The road to profits has proved much easier than the path to patentability, however. In July 1989, Dembiczak filed a utility patent application generally directed to the pumpkin bags. In a February 1992 appeal, the Board of Patent Appeals and Interferences ("the Board") reversed the Examiner's rejection, but entered new grounds for rejection. Dembiczak elected to continue prosecution, filing a continuation application to address the new grounds for rejection. Thereafter, the invention made a second appearance before the Board, in April 1993, when the Board both sustained the Examiner's rejection and again entered new grounds for rejection. Again, a continuation application was filed (the instant application). And again the Examiner's rejection was appealed to the Board, which sustained the rejection in a May 14, 1998, decision. See *Dembiczak*, slip op. at 43.

A

The patent application at issue includes claims directed to various embodiments of

the pumpkin bag. Claims 37, 49, 51, 52, 58 through 64, 66 through 69, and 72 through 81 are at issue in this appeal. Though the claims vary, independent claim 74 is perhaps most representative:

74. A decorative bag for use by a user with trash filling material, the bag simulating the general outer appearance of an outer surface of a pumpkin having facial indicia thereon, comprising:
a flexible waterproof plastic trash or leaf bag having
an outer surface which is premanufactured orange in color for the user to simulate the general appearance of the outer skin of a pumpkin, and having
facial indicia including at least two of an eye, a nose and a mouth on the orange color outer surface for forming a face pattern on said orange color outer surface to simulate the general outer appearance of a decorative pumpkin with a face thereon,
said trash or leaf bag having first and second opposite ends, at least said second end having an opening extending substantially across the full width of said trash or leaf bag for receiving the trash filling material,
wherein when said trash or leaf bag is filled with trash filling material and closed, said trash or leaf bag takes the form and general appearance of a pumpkin with a face thereon.

All of the independent claims on appeal, namely 37, 52, 72, and 74, contain limitations that the bag must be "premanufactured orange in color," have "facial indicia," have openings suitable for filling with trash material, and that when filled, the bag must have a generally rounded appearance, like a pumpkin. Independent claims 37, 52, and 72 add the limitation that the bag's height must be at least 36 inches. Claim 72 requires that the bag be made of a "weatherproof material," and claim 74, as shown above, requires that the bag be "waterproof." Claim 52 recites a

B

The prior art cited by the Board includes:

- (1) pages 24-25 of a book entitled "A Handbook for Teachers of Elementary Art," by Holiday Art Activities ("Holiday"), describing how to teach children to make a "Crepe Paper Jack-O-Lantern" out of a strip of orange crepe paper, construction paper cut-outs in the shape of facial features, and "wadded newspapers" as filling;
- (2) page 73 of a book entitled "The Everything Book for Teachers of Young Children," by Martha Shapiro and Valerie Inderbaum ("Shapiro"), describing a method of making a "paper bag pumpkin" by stuffing a bag with newspapers, painting it orange, and then painting on facial features with black paint;
- (3) U.S. Patent No. 3,949,991 to Leonard Kessler, entitled "Flexible Container" ("Kessler"), describing a bag apparatus wherein the bag closure is accomplished by the use of folds or gussets in the bag material;
- (4) U.S. Patent No. Des. 310,023, issued August 21, 1990 to Dembiczak ("Dembiczak '023"), a design patent depicting a bag with a jack-o'-lantern face;
- (5) U.S. Patent No. Des. 317,254, issued June 4, 1991 to Dembiczak ("Dembiczak '254"), a design patent depicting a bag with a jack-o'-lantern face; and,
- (6) Prior art "conventional" plastic lawn or trash bags ("the conventional trash bags").

Using this art, the Board affirmed the Examiner's final rejection of all the independent claims (37, 52, 72, 74) under 35

U.S.C. § 103, holding that they would have been obvious in light of the conventional trash bags in view of the Holiday and Shapiro references. The Board determined that, in its view of the prior art, "the only difference between the invention presently defined in the independent claims on appeal and the orange plastic trash bags of the prior art and the use of such bags resides in the application of the facial indicia to the outer surface of the bag." *Dembiczak*, slip op. at 18. The Board further held that the missing facial indicia elements were provided by the Holiday and Shapiro references' description of painting jack-o'-lantern faces on paper bags. See *id.* at 18-19. Dependent claims 49 and 79, which include a "gussets" limitation, were considered obvious under similar reasoning, except that the references cited against them included Kessler. See *id.* at 7.

The Board also affirmed the Examiner's obviousness-type double patenting rejection of all the independent claims in light of the two Dembiczak design patents ('023 and '254) and Holiday. See *id.* at 12. The Board held that the design patents depict a generally rounded bag with jack-o'-lantern facial indicia, and that the Holiday reference supplies the 'missing' limitations, such as the "thin, flexible material" of manufacture, the orange color, the initial ly-open upper end, and the trash filling material. The Board also stated that the various limitations of the dependent claims—e.g., color, the inclusion of leaves as stuffing, and the dimensions—would all be obvious variations of the depictions in the Dembiczak design patents. See *id.* at 8-9. In addition, using a two-way test for obviousness-type double patenting, the Board held that the claims of the Dembiczak design patents "do not exclude" the additional structural limitations of the pending utility claims; and thus the design patents were merely obvious variations of the subject matter disclosed in the utility claims. See *id.* at 11. The Board further upheld, on similar grounds and with the inclusion of the Kessler reference, the ob-

viousness-type double patenting rejection of dependent claim 49. See *id.* at 12. This appeal followed, vesting this court with jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) (1994).

II

[1] A claimed invention is unpatentable if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a) (Supp.1998); see *Graham v. John Deere Co.*, 383 U.S. 1, 14, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 USPQ 459, 465 (1966). "The ultimate determination of whether an invention is or is not obvious is a legal conclusion based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. See *Graham*, 383 U.S. at 17-18, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 USPQ at 467; *Miles Labs, Inc. v. Shandon Inc.*, 997 F.2d 870, 877, 27 USPQ2d 1123, 1128 (Fed.Cir.1993). We therefore review the ultimate determination of obviousness without deference to the Board, while examining any factual findings for clear error. See, e.g., *In re Zurko*, 142 F.3d 1447, 1459, 46 USPQ2d 1691, 1700 (Fed.Cir.) (en banc), cert. granted, — U.S. —, 119 S.Ct. 401, 142 L.Ed.2d 326 (1998).

A

[2] Our analysis begins in the text of section 103 quoted above, with the phrase "at the time the invention was made." For it is this phrase that guards against entry into the "tempting but forbidden zone of hindsight," see *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 873, 228 USPQ 90, 98 (Fed.Cir.1985), overruled on other grounds by *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 46 USPQ2d

1097 (Fed.Cir.1998), when analyzing the patentability of claims pursuant to that section. Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See, e.g., *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 UPSQ 303, 313 (Fed.Cir.1983). Close adherence to this methodology is especially important in the case of less technologically complex inventions, where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *Id.*

[3] Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., *C.R. Bard, Inc. v. M/s Syle, Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed.Cir.1998) (describing "teaching or suggestion or motivation [to combine]" as an "essential evidentiary component of an obviousness holding"); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed.Cir.1998) ("the Board must identify specifically . . . the reasons one of ordinary skill in the art would have been motivated to select the references and combine them"); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed.Cir.1992) (examiner can satisfy burden of obviousness in light of combination "only by showing some objective teaching [leading to the combination]"); *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed.Cir.1988) (evidence of teaching or suggestion "essential" to avoid hindsight); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 297, 227 USPQ 657, 667 (Fed.

sight trap.

[4, 5] We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed.Cir.1996), *Paradance Mfg. v. SGS Importers Intern., Inc.*, 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed.Cir.1995), although "the suggestion more often comes from the teachings of the pertinent references," *Rouffet*, 149 F.3d at 1355, 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. See, e.g., *C.R. Bard*, 157 F.3d at 1352, 48 USPQ2d at 1232. Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." E.g., *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed.Cir.1993) ("Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of

material fact.”); *In re Sichert*, 566 F.2d 1154, 1164, 196 USPQ 209, 217 (CCPA 1977) (“The examiner’s conclusory statement that the specification does not teach the best mode of using the invention is unaccompanied by evidence or reasoning and is entirely inadequate to support the rejection.”). In addition to demonstrating the propriety of an obviousness analysis, particular factual findings regarding the suggestion, teaching, or motivation to combine serve a number of important purposes, including: (1) clear explication of the position adopted by the Examiner and the Board; (2) identification of the factual disputes, if any, between the applicant and the Board; and (3) facilitation of review on appeal. Here, however, the Board did not make particular findings regarding the locus of the suggestion, teaching, or motivation to combine the prior art references.

[6] All the obviousness rejections affirmed by the Board resulted from a combination of prior art references, e.g., the conventional trash or yard bags, and the Holiday and Shapiro publications teaching the construction of decorated paper bags. See *Dembiczak*, slip op. at 6-7. To justify this combination, the Board simply stated that “the Holiday and Shapiro references would have suggested the application of . . . facial indicia to the prior art plastic trash bags.” *Id.* at 18-19. However, rather than pointing to specific information in Holiday or Shapiro that suggest the combination with the conventional bags, the Board instead described in detail the similarities between the Holiday and Shapiro references and the claimed invention, noting that one reference or the other—in combination with each other and the conventional trash bags—described all of the limitations of the pending claims. See *id.* at 18-28. Nowhere does the Board particularly identify any suggestion, teaching, or motivation to combine the children’s art references (Holiday and Shapiro) with the conventional trash or lawn bag references, nor does the Board make specific—or even inferential—findings concerning the identi-

different from that relied upon by the Board, arguing that one of ordinary skill in the art would have been motivated to combine the references. Of course, in order to do so, the Commissioner must do what the Board did not do below: make specific findings of fact regarding the level of skill in the art (“a designer and manufacturer of trash and leaf bags, particularly one specializing in the ornamental and graphic design of such bags”), Resp’t Br. at 14, the relationship between the fields of conventional trash bags and children’s crafts, respectively (“[t]he artisan would also have been well aware of the ancillary, corollary, and atypical uses of ‘trash’ bags such as their application in hobby and art projects”), Resp’t Br. at 15, and the particular features of the prior art references that would motivate one of ordinary skill in a particular art to select elements disclosed in references from a wholly different field (“a designer and manufacturer of trash and leaf bags would have recognized the paper bag in Shapiro to be a trash bag and therefore would have been motivated to combine it with the admitted prior art plastic trash and leaf bags to arrive at the claimed invention”), Resp’t Br. at 15. The Commissioner also appears to cite additional references in support of his obviousness analysis, noting that at least two design patents (in the record but not cited against the presently pending claims) teach the placement of “graphical information, including text, designs, and even facial indicia, to colored bags.” Resp’t Br. at 16. This new analysis, apparently cut from whole cloth in view of appeal, does little more than highlight the shortcomings of the decision below, and we decline to consider it. See, e.g., *In re Robertson*, 169 F.3d 743, 746, 49 USPQ2d 1949, 1951 (Fed. Cir. 1999) (“We decline to consider [the Commissioner’s] newly-minted theory as an alternative ground for upholding the agency’s decision.”); *In re Soni*, 54 F.3d 746, 751, 34 USPQ2d 1684, 1688 (Fed. Cir. 1995); *In re Hounsfield*, 699 F.2d 1320, 1324, 216 USPQ 1045, 1049 (Fed. Cir. 1983) (rejecting an “attempt[] by the Commis-

sioner ‘to apply a new rationale to support the rejection.’”); see also 35 U.S.C. § 144 (1994) (an appeal to the Federal Circuit “is taken on the record before The Patent and Trademark Office”). Because the Board has not established a *prima facie* case of obviousness, see *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (“The PTO bears the burden of establishing a case of *prima facie* obviousness.”), we therefore reverse the obviousness rejections, and have no need to address the parties’ arguments with respect to secondary factors.

III

[8, 9] Dembiczak also asks this court to reverse the Board’s rejection of the pending claims for obviousness-type double patenting, which is a judicially-created doctrine that seeks to prevent the applicant from expanding the grant of the patent right beyond the limits prescribed in Title 35. See, e.g., *In re Braat*, 937 F.2d 589, 592, 19 USPQ2d 1289, 1291-92 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887, 892, 225 USPQ 645, 648 (Fed. Cir. 1985). See also 35 U.S.C. § 154(a)(2) (Supp. 1998) (discussing patent term). The doctrine prohibits claims in a second patent which define “merely an obvious variation” of an invention claimed by the same inventor in an earlier patent. *Braat*, 937 F.2d at 592, 19 USPQ2d at 1292 (quoting *In re Vogel*, 57 C.P.A. 920, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970)). Thus, unless a claim sought in the later patent is patently distinct from the claims in an earlier patent, the claim must be rejected. See *In re Goodman*, 11 F.3d 1046, 1052, 29 USPQ2d 2010, 2015 (Fed. Cir. 1993); *Vogel*, 422 F.2d at 441, 164 USPQ at 622. This question is one of law, which we review *de novo*. See *Goodman*, 11 F.3d at 1052, 29 USPQ2d at 2015; *Texas Instruments Inc. v. United States Int’l Trade Comm’n*, 988 F.2d 1165, 1179, 26 USPQ2d 1018, 1029 (Fed. Cir. 1993).

B

[7] The Commissioner of Patents and Trademarks (“Commissioner”) attempts to justify the Board’s decision on grounds

Cite as 175 F.3d 1003 (Fed. Cir. 1999)

A

[10, 11] The law provides that, in some very rare cases, obvious-type double patenting may be found between design and utility patents. See *Carman Indus., Inc. v. Wahl*, 724 F.2d 932, 939-40, 220 USPQ 481, 487 (Fed.Cir.1983) (noting that, while theoretically possible, "[d]ouble patenting is rare in the context of utility versus design patents"); *In re Thorington*, 57 C.C.P.A. 769, 418 F.2d 528, 536-37, 163 USPQ 644, 650 (CCPA 1969) (Double patenting between a design and utility patent is possible "if the features producing the novel aesthetic effect of a design patent or application are the same as those recited in the claims of a utility patent or application as producing a novel structure."); *In re Phelan*, 40 C.C.P.A. 1023, 205 F.2d 183, 98 USPQ 156 (CCPA 1953); *In re Barber*, 81 F.2d 231, 28 USPQ 187 (CCPA 1936); *In re Hargraves*, 53 F.2d 900, 11 USPQ 240 (CCPA 1931). In these cases, a "two-way" test is applicable. See *Carman*, 724 F.2d at 940, 220 USPQ at 487. Under this test, the obviousness-type double patenting rejection is appropriate only if the claims of the two patents cross-read, meaning that "the test is whether the subject matter of the claims of the patent sought to be invalidated would have been obvious from the subject matter of the claims of the other patent, and vice versa." *Id.*, 724 F.2d 932, 220 USPQ at 487. See also *Braat*, 937 F.2d at 593, 19 USPQ2d at 1292 (explaining two-way test).

B

In making its double patenting rejection, the Board concluded that all but one of the pending claims of Dembiczak's utility application would have been merely an obvious variation of the claims of the earlier-issued design patents—the Dembiczak '023 and '254 references—in light of the Holiday reference. The remaining claim, dependent claim 49, was judged obvious in light of the combination of the Dembiczak design patents, Holiday, and the Kessler reference.

application, the Commissioner may require the application to be restricted to one of the inventions."); 37 C.F.R. § 1.142. The position adopted by the Board—that a textual description of facial indicia found in the claims of the utility patent application makes obvious the specific designs claimed in the (patentably distinct) Dembiczak design patents—would presumably render obvious, or even anticipate, all design patents where a face was depicted on a bag. But this, of course, is not the law; the textual description cannot be said to be a reference "basically the same as the claimed design," of the design patents at issue here. *Borden*, 90 F.3d at 1574, 39 USPQ2d at 1526 (internal quotation marks omitted). The Board's conclusion of obviousness is incorrect.

Because we find that the Board erred in concluding that the design patents were obvious variants of the pending utility claims, we need not address the other prong of the two-way double patenting test—whether the pending utility claims are obvious variations of the subject matter claimed in the design patents. See *Carman*, 724 F.2d at 939, 220 USPQ at 487 (both prongs of the two-way test required for obviousness-type double patenting). The double patenting rejections are reversed.

IV

Because there is no evidence in the record of a suggestion, teaching, or motivation to combine the prior art references asserted against the pending claims, the obviousness rejections are reversed. In addition, because the Board misapplied the test for obviousness-type double patenting, and because the pending utility claims do not render obvious the design patents, the double patenting rejections are also reversed.

REVERSED.



UNITED STATES, Defendant-Appellee.

No. 98-5133.

United States Court of Appeals,
Federal Circuit.

May 3, 1999.

Owner of copyright for computer software program brought infringement action against the United States. The United States Court of Federal Claims, James T. Turner, J., dismissed action, and owner appealed. The Court of Appeals, Friedman, Senior Circuit Judge, held that statute which bars recovery for any copyright infringement by the government committed more than three years before filing of complaint was not equitably tolled.

Affirmed.

1. Limitation of Actions \Rightarrow 104.5

Statute which bars recovery for any copyright infringement by the government committed more than three years before the filing of the complaint was not equitably tolled prior to copyright holder's receipt of witness statement disclosing infringement, absent allegation that government concealed the alleged infringement or that copyright holder was unaware of the infringement until such receipt. 28 U.S.C.A. § 1498(b).

2. Federal Civil Procedure \Rightarrow 175.4

Even where equitable tolling might apply, a complaint properly may be dismissed for failure to state a claim as time-barred if (1) the face of the complaint shows that the claim is time-barred and (2)

50 CCPA 988

Court of Customs and Patent Appeals

In re OTTO, OTTO, AND BRITON

Appl. No. 6901 Decided Feb. 13, 1963

PATENTS

1. Patentability—Tests of—In general (851.701)

Claims are directed to particular device and method of making that device, not to method of curling hair wherein particular device is used; hence, patentability cannot be predicated upon certain procedure for curling hair using this device and involving a number of steps in the process; cited cases deal with impropriety of relying on method concept to distinguish structural claim over prior art and indicate that inclusion of material or article worked upon by a structure being claimed does not impart patentability to claims.

Particular patents—Hair Curlers

Otto, Otto, and Briton, Hair Curlers for Permanent Waving and Manufacture Thereof, claims 1 to 4 of application refused.

Appeal from Board of Appeals of the Patent Office.

Application for patent of Carl Louis Otto, Lanelle Burnham Otto, and Joan Briton, Serial No. 512,520, filed June 1, 1955; Patent Office Division 35. From decision rejecting claims 1 to 4, applicants appeal. Affirmed.

CLARENCE M. FISHER and PENNIE EDMONDS, MORTON, BARROWS & TAYLOR (JOHN T. ROBERTS of counsel) all of Washington, D.C., for appellants.

CLARENCE W. MOORE (JOSEPH F. NAKAMURA of counsel) for Commissioner of Patents.

Before WORLEY, Chief Judge, and RICH, MARTIN, SMITH, and ALMOND, Associate Judges.

MARTIN, Judge.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the Primary Examiner's rejection of claims 1-4 of appellants' application Ser. No. 512,520 filed June 1, 1955 for Hair Curlers for Permanent Waving and Manufacture Thereof.

Claims 1 and 4, illustrative of the appealed claims, read:

1. As a new article of manufacture, a core member for hair curlers com-

prising a body of elastically resilient foam material, the hair being wound directly on said body and said body carrying a hair waving lotion in non-liquid form distributed in the pores of the material.

4. The method of making a core member of the character described for hair curlers which comprises providing a body of elastically resilient foam material, saturating the body with a hair waving lotion consisting of a water-soluble solution of saponified material and thereafter permitting the saturated body to dry, whereby to produce a body the pores of which are substantially impregnated with a waving solution in non-liquid form adapted to be activated by subsequent wetting of the body.

The references relied on by the examiner and the board are:

Picard, 1,219,147, Mar. 13, 1917.
Banigan et al., 2,295,823, Sept. 15, 1942.
Ramsey, 2,418,664, Apr. 8, 1947.
Moses, 2,720,206, Oct. 11, 1955.
Connolly, 2,761,166, Sept. 4, 1956.
Lyons, 2,763,885, Sept. 25, 1956.
L'Oreal (France), 966,988, Mar. 15, 1950.

Appellants' application relates to a core member for hair curlers. The body of the core member is made up of an elastically resilient foam material, e.g., a resinous polyurethane. It can be of any suitable shape, although the drawing shows it as cylindrical. A hair waving lotion, which may be a water-soluble mixture of thioglycolic acid and ammonia, in non-liquid form, is contained in the pores of the foam material. The lotion may be deposited by first saturating the core member with the lotion in solution form and thereafter permitting it to dry.

In use, the core member may have the tresses of hair wound on it while the core and hair are both dry. After the dry hair is wound on the dry core and fixed in place by appropriate retaining means, depending on the specific construction of the curler, the curler with the hair wound on it is then thoroughly wetted and manipulated by squeezing or twisting of the core member to force the lotion from the pores of the core member outwardly to saturate the hair wound on the curler.

The Moses patent discloses a hair curler provided with an absorbent pad member in the form of a cylinder of natural sponge, viscose sponge or the like for holding a permanent wave solu-

tion to be squeezed out into the hair wound on the curler.

Each of the Connolly and Lyons patents relates to a core member of absorbent material provided with a dry dentifrice which is activated for use by contact with a liquid. Picard discloses a similar member impregnated with a dentifrice or antiseptic while Banigan et al. relates to sponges impregnated with numerous materials.

The Ramsey patent and the French patent to L'Oreal each discloses a cream for use in the permanent waving of hair. The cream comprises a base which may include an emulsifiable water-soluble mixture of thioglycolic acid and ammonia.

The examiner indicated that in the light of the teachings of Lyons, Picard, Connolly and Banigan et al. he did not see "that invention would be involved in providing the pores of a core, as shown in Moses, with a non-liquid lotion, to be activated by liquid at the time of use." The examiner further rejected the claims as unpatentable over any of Picard, Lyons and Banigan et al. in view of either Ramsey or L'Oreal taking the position that "it would not require invention to substitute the dry hair-waving compositions of either secondary reference for the dentifrice of each primary reference."

The board in affirming the rejection of the appealed claims stated:

"... We agree that the art used makes it obvious to incorporate in a sponge a material that has an unspecified degree of dryness (including the substantial degree of some of the art) that causes the material to be retained in the sponge and thus makes obvious doing this with hair waving material."

Appellants urge that the Moses core is not the article of manufacture which appellants claim. They contend that the Moses core is merely a wick inside of a perforated metal hair curler which when compressed will release liquid through the pores of the metal curler. Appellants also urge that the patents of Picard, Connolly and Lyons, which show a water-soluble dentifrice impregnated in a sponge body useful as a toothbrush and the Banigan et al. patent which mentions that artificial sponges may be impregnated with numerous materials "would not be reasonably expected to teach modifying the Moses curler." Appellants further contend that the cream lotion of Ramsey and L'Oreal will not work in their invention.

[1] First of all it should be remembered that the claims are directed to a

particular device and a method of making that device, not to a method of curling hair wherein this particular device is used. It seems appellants are endeavoring to predicate patentability upon a certain procedure for curling hair using this device and involving a number of steps in the process. This process is irrelevant as is the recitation involving the hair being wound around the core insofar as the determination of whether these particular claims should be allowed or rejected. In re Lampert et al., 44 CCPA 988, 245 F.2d 263, 114 USPQ 163; In re Rishoi et al., 39 CCPA 1004, 197 F.2d 342, 94 USPQ 71; In re Mulholland, 29 CCPA 1222, 129 F.2d 860, 54 USPQ 388; In re Young, 22 CCPA 1060, 75 F.2d 996, 25 USPQ 69. It will be seen that the Lampert case pertains to the impropriety of relying on a method concept to distinguish a structural claim over the prior art and Rishoi and the others indicate that inclusion of the material or article worked upon by a structure being claimed does not impart patentability to the claims.

The particular device claimed is an elastically resilient "core member for hair curlers" * * * carrying a hair waving lotion in non-liquid form distributed in the pores of the material." It should be noted at this point that no attaching means is recited in the claims.

Moses teaches a pad member which "is first charged with a curling liquid" to be inserted in a mandrel to be used for hair curling purposes. Picard, Banigan et al., Connolly and Lyons all teach impregnating sponge-like material with various substances for various purposes such as brushing teeth and polishing metalware. Connolly and Lyons teach impregnating a sponge-like material with dry substances to be activated by contact with a liquid. In view of these teachings we believe it would be within the skill of the art to apply those disclosures of Connolly and Lyons to Moses' pad. Since appellants' structure claims pertain only to a core or pad member and recite no means for attaching it to the hair, it is apparent that the invention does not distinguish over Moses' pad¹ in view of Connolly and Lyons insofar as the concept of impregnating the pores of a sponge-like pad with a dry substance, which pad is to be used in connection with hair curlers.

Appellants have never questioned that a hair curling composition, such as the

¹ There seems to be no contention on the part of appellants that patentability resides in the substitution of known foamed plastic in lieu of Moses' sponge material and we see none.

water-soluble saponified thioglycolin-ammonia mentioned in their application, can be provided in dry form. Therefore no issue arises with reference to that matter. However it should be noted that even though the creams of L'Oreal and Ramsey may contain ingredients of appellants' hair curling preparation, being in cream form, it would not be practicable to endeavor to impregnate a hair curling pad with them.

Although the structure claims do not recite any means by which the core member could be attached to the hair and thus the manner of its intended use is of no significance, it might be well to note that the Moses pad impregnated with a dry hair curling substance would be operable with a non-liquid solution. Thus the core could be used by dipping the mandrel containing the pad into water which would activate the hair curling substance in the pad and then the mandrel could be attached to the hair and the liquid would be squeezed from the pad through the perforations in the mandrel into the hair by means of the plunger activity associated with the locking device. There is no significance in the fact that the Moses pad would be moistened differently than appellants' since, as stated, methods are not involved here. For these reasons we affirm the rejection of claims 1, 2 and 3.

Coming to claim 4, the only aspect of the recited method which requires additional consideration reads:

***, saturating the body with a hair waving lotion *** and thereafter permitting the saturated body to dry, *** adapted to be activated by subsequent wetting of the body.

It does not appear to us that it would be beyond the skill of an ordinary workman in this art who desires to impregnate a foam-like material with a liquid soluble substance to prepare that substance in liquid form then saturate the material with it. Upon the material and the substance becoming dry, the substance obviously would remain in the pores of the material until it is reactivated by being wetted. We feel certain that this procedure takes place every day in the homes in this country where a housewife saturates a sponge with soapy water then permits the sponge to dry and, unless she has rinsed the sponge thoroughly, when she wets the sponge again the water squeezed therefrom will be soapy. For these reasons we affirm the rejection of claim 4.

In view of the foregoing we affirm the decision of the board.

50 CCPA 918

Court of Customs and Patent Appeals

In re HANDEL

Appl. No. 6902 Decided Feb. 13, 1963

PATENTS

1. Reissue—In general (§ 58.1)

In addition to original patent claims, reissue application also contains narrower claims; narrower claims are simply a hedge against possible invalidity of original claims should alleged prior use be proved, which is a proper reason for asking that reissue be granted.

2. Board of Appeals—Examiner's statement and reply to brief (§ 19.20)

Court of Customs and Patent Appeals —In general (§ 28.01)

Court assumes facts concerning prosecution of application for original patent since facts were stated in examiner's answer, on appeal from rejection of claims of reissue application, and applicant did not deny them.

3. Reissue—Inadvertence, accident and mistake (§ 58.3)

Deliberate cancellation of claims in original application, to obtain issuance, is not error (35 U.S.C. 251) and, therefore, bars grant of similar claims in reissue, even though claims were cancelled merely in response to requirement for division.

4. Court of Customs and Patent Appeals — Issues determined — Ex parte patent cases (§ 28.203)

Court's function is to pass only on such grounds of rejection as have not been reversed by highest tribunal of Patent Office; in instant case, that means that only grounds before court are final reasons given by Board for refusing appealed claims.

5. Reissue—Same invention as original (§ 58.7)

It is error to look only to claims of the patent, in determining whether reissue claims are for invention disclosed in original patent, since this disregards express command of 35 U.S.C. 251, which is to look at the disclosure; entire disclosure of original patent is considered in determining what patentee intended to claim and what invention patent discloses.

6. Construction of specification and claims—In general (§ 22.01)

Whenever element or limitation is added to or taken from claim, it becomes claim to different invention.

7. Reissue—Same invention as original (§ 58.7)

Whole purpose of 35 U.S.C. 251, so far as claims are concerned, is to permit limitations to be added to claims that are too broad or to be taken from claims that are too narrow; that is what statute means in referring to "claiming more or less than he has a right to claim."

Particular patents—Applicator

2,705,797, Handel, Terminal Applicator Construction, claims 4 to 6 of reissue application allowed.

Appeal from Board of Appeals of the Patent Office.

Application, Serial No. 755,830, filed Aug. 1, 1958, of George J. Handel, Jr., for reissue of Patent No. 2,705,797, issued Apr. 12, 1955; Patent Office Division 11. From decision rejecting claims 4 to 6, applicant appeals. Reversed.

ROGER L. HANSEL and STEVENS, DAVIS, MILLER & MOSHER, both of Washington, D.C., and WILLIAM HINTZE, Harrisburg, Pa. (TRUMAN S. SAFFORD, New York, N.Y., and MARSHALL M. HOLCOMBE, Harrisburg, Pa., of counsel for appellant.)

CLARENCE W. MOORE (RAYMOND E. MARTIN of counsel) for Commissioner of Patents.

Before WORLEY, Chief Judge, and RICH, MARTIN, SMITH, and ALMOND, Associate Judges.

RICH, Judge.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 4-6 of appellant's application Ser. No. 755,830, filed August 1, 1958, for reissue of his patent No. 2,705,797, granted April 12, 1955, for "Terminal Applicator Construction."

The sole issue in the case is whether the appealed claims are "for the invention disclosed in the original patent," as required by 35 U.S.C. 251, the statute governing the granting of reissues. The Patent Office held they are not and appellant argues to the contrary.

The invention disclosed in the original patent 1 is a machine for applying elec-

1 The patent is not included in the record. The Patent Office Solicitor's brief admits, however, that the specifications of the patent and of the application are identical. We presume this admission includes the drawings. There were 3 original patent claims which are allowed claims in this reissue application, viz., claims 1, 2, and 3, the same numbers they have in the patent.

trical terminals to pieces of wire, the terminals being fed by the machine from a reel to the point of application in continuous strips from which they are severed, as applied, one at a time. The need appellant sought to fill by his invention was for a machine capable of being variously set up to apply automatically "a considerable variety of electrical terminals or connectors." To this end, the machine, which is in the nature of a stamping press, is arranged to employ a variety of sets of matched crimping and shearing dies suited for use with the different terminals or connectors; and the feeding mechanism, which advances the strips of terminals or connectors one unit at a time, is made adjustable. Two of the more significant objects of the invention stated in the application read as follows:

Another object is the provision in a press of a practicable apparatus for applying terminals in which any one of several terminal feeding relationships may be selected and with which any one of several terminal applying assemblies may be combined all as a matter of mere routine. * * * A still further object resides in the provision of a feeding assembly wherein the length of feed may readily and accurately be adjusted. [Emphasis ours.]

It is not questioned that the specification and drawings fully describe a machine which carries out these objects.

The Claims

The Patent Office admits that appealed claims 4, 5, and 6 incorporate entirely (with the exception of changing the word "mechanism" to "machine") the language of original patent claims 1, 2, and 3 and differ therefrom in subject matter only in that each of the appealed claims adds one or two elements to the patent claim on which it is based. We quote as acceptable the solicitor's explanation:

Claim 4 adds to claim 1 a storing means (the reel) and a means for sequentially feeding the connector strip, the latter having an adjustable stroke. Claim 5 is similar in scope to claim 4, except that it omits the storing means of the latter claim. Claim 6 likewise omits the storing means, but specifies that the feeding means or mechanism has "a plurality of settings corresponding to different feed strokes required by the different size and shape strip connectors."

The solicitor also states, and we agree, that the issue before us is the same as

The tapered structure of the ribs set forth in some of the claims depending from claim 6 are shown by Herr * * * and the polygonal cross section of the shank recited in claims 12 and 15 is not particularly relied on by the appellant for a patentable distinction and, further, is common, the Examiner referring generally to the art of record for this aspect.

Both the appellant and the solicitor discuss extensively the Herr reference. The appellant argues:

Thus Herr fails completely to teach or suggest (1) the concept of providing ribs adapted to be compressed within a workpiece aperture and formed around an edge thereof for providing retaining shoulders, (2) the concept of obtaining the combination of both shoulders formed on the ribs and shoulders provided by expanding the solid surface of the shank sections for retaining the fastener while facilitating expansion of the fastener, particularly in relatively thick work structures, (3) the provision of a plurality of the aforementioned ribs on a shank section, (4) the provision of the aforementioned ribs on each of the shank sections, and (5) the extension of the ribs on the expandable shank sections substantially to the enlarged head of the device.

The solicitor argues:

The Herr * * * disclosure falls in being completely anticipatory of appellant's fastener in only two respects. First, it does not specifically teach the placing of a plurality of compressible ribs on each of the shank sections 10 (one rib 14 only being shown on each of the two sections in Herr * * *) and secondly, the ribs shown do not extend to the head.

The solicitor argues that the board correctly relied on the teachings in Whitted (a plurality of compressible ribs) and in Rapata (ribs extending to the head providing locking shoulders) in holding the claimed combination obvious.

As to appellant's five contentions regarding Herr the solicitor argues as follows:

The disclosure of Herr * * * would seem to refute each of appellant's five contentions. As to items (1) and (2), the patent clearly shows (1) ribs 14 adapted to be compressed within a properly sized workpiece aperture, to (2) cooperate with the shank sections upon expansion thereof and form shoulders for re-

taining the fastener in the aperture. This relationship is a matter that is determined by the nature, shape, and size of the aperture in the parts to be fastened with relation to the size of the shank and the ribs. Much more than a mere provision of ribs is involved. If the ribs in appellant's device have in themselves the potential for expansion to form a shoulder upon expansion of the shank sections of appellant's fastener, they likewise must have the same potential in the Herr * * * fastener, since there is no difference in structure over the reference insofar as the first two items are concerned.

With reference to appellant's third and fourth contentions, it is to be noted that even though only two ribs are shown on the shank sections in the drawing, the Herr * * * disclosure in no way expressly limits the number of ribs to two and might be said to suggest use of as many as might be needed in the statement * * * that "projecting ribs 14 may be arranged on the outer surface 10" of the shank. It is submitted that this statement would provide ample motive for providing a plurality of ribs on all of the shank sections of the Herr * * * fastener if it were deemed either necessary or desirable. Such is especially the case since reference numeral 10 in Figure 5 identifies adjacent sections 10 one with and one without ribs.

Turning now to appellant's fifth contention, it is to be noted that the ribs 14 of the Herr * * * fastener * * * contrary to appellant's argument, do extend substantially to the head of the fastener. The language used by appellant in the appealed claims which requires the ribs to extend substantially to the head is clearly broad enough to permit termination the ribs of appellants device a small distance before they reach the head, as in the Herr * * * device, * * *

[1] We are unable to find any error in the result reached by the board. The appellant's arguments as to the absence of ribs extending to the head in Herr are not convincing in view of the fact that all of the appealed claims state that the ribs must extend "substantially" to the head. Also, the features of a plurality of ribs or locking shoulders formed from ribs are taught by the prior art. While Herr may disclose that his ribs are an added feature, that embodiment of the Herr invention is not taught to be inferior and is entitled to the same considera-

tion as the other teachings of record. We think the board correctly noted that appellant has offered no clear indication of any particular advantages of the claimed invention over the closely related fasteners disclosed in the prior art.

The decision of the board is therefore affirmed.

ALMOND, Judge.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1 through 6 of appellant's application entitled "Brush Fed Tape Dispenser." Claims 7 and 8 were allowed.

The claimed invention relates to a machine for dispensing adhesive tape. Claim 1 is illustrative:

PATENTS

1. Patentability — New use or function — In general (§ 51.551)

Patentability — Tests of — In general (§ 51.701)

Manner or method in which machine is to be utilized is not germane to issue of patentability of machine itself.

Particular patents—Tape Dispenser, Casey, Brush Fed Tape Dispenser, claims 1 to 6 of application refused.

Appeal from Board of Appeals of the Patent Office.

Application for patent of James H. Casey, Serial No. 10,239, filed Feb. 23, 1960; Patent Office Group 340. From de-

cision rejecting claims 1 to 6, applicant appeals. Affirmed.

CHARLES H. LAUDER, St. Paul, Minn., for appellant.
JOSEPH SCHIMMEL (S. WILLIAM COCHRAN, of counsel) for Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, SMITH, and ALMOND, Associate Judges, and KIRKPATRICK, Judge.*

ALMOND, Judge.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1 through 6 of appellant's application entitled "Brush Fed Tape Dispenser." Claims 7 and 8 were allowed.

The claimed invention relates to a machine for dispensing adhesive tape. Claim 1 is illustrative:

1. A taping machine comprising a supporting structure, a brush attached to said supporting structure, said brush being formed with projecting bristles which terminate in free ends to collectively define a surface to which adhesive tape will detachably adhere, and means for providing relative motion between said brush and said supporting structure while adhesive tape is adhered to said surface. Figures 2 and 3 of appellant's drawings are depicted below:

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation. 1 Serial No. 10,239, filed February 23, 1960.

berg inasmuch as Hackett mentions the Engberg patent in his disclosure.

In its affirmance of the rejection of claims 1 to 6 the board, noting appellant's argument that the claims require that the reference used be directed to a "taping machine" and "tape dispensing machine" as recited in the preambles of said claims, stated:

Such designation in the preamble is not definitive of specific structure or character of mechanism. The claim must stand or fall upon the elements recited therein. While claim 1 continues to note that adhesive tape will adhere to a brush, the structure so indicated differs in no way from that present in Kienzle where a driven brush is shown as supporting a band of material. The structure thus provided has the capabilities recited which is all that is required to satisfy the terms of the claims. ***

We agree with the solicitor that the real issue of substance in this case is resolvable on the basis of the merits of the rejection of claim 1, all of the structural limitations of which were held either to be shown in Kienzle or to be obvious in view thereof.

The essence of appellant's contention resides in the argument that:

Both the examiner and the Board have entirely disregarded the words "taping machine" and "tape dispensing machine" as they appear in claims 1 through 6. . . . [and] the language in the claims concerning the adherence of the adhesive tape to the surface formed by the free ends of the bristles of the brush. . . .

Appellant asserts that the language relating to the adherence of the tape to the bristles of the brush is a functional expression which must be given weight and that, when taken in conjunction with the preamble words "taping machine" and "tape dispensing machine," the error of the board in disregarding such language becomes manifest.

As to the obviousness of the structure recited in claim 1, we have no doubt that the Kienzle brush is intended to be mounted on a supporting structure accompanied by means of rotation. That portion of the claim which requires that "projecting bristles" terminate in free ends to collectively define a surface" is anticipated by Kienzle.

We are not persuaded that the board "entirely disregarded" the preamble and functional language as asserted by appellant. The board found that appellant's structure, even in view of the claim language, differed in no way from

than its thickness. . . . [The] carrier . . . may be a drum the surface of which consists of felt, or of a brush . . . which likewise can support the sheet against the action of the pins without offering the said pins any resistance against penetrating.

Kienzle's sheet is supported by a rotary brush with open end bristles. Hackett shows a tape dispensing device having a dispensing drum rotatably mounted on supporting means. The drum supports fins to which adhesive tape is adhered. Tape is advanced from a supply through rotational movement of the drum by pneumatic means. The tape is severed by means of a blade.

Engberg discloses apparatus for dispensing adhesive tape by adhering the tape to spaced carriers in the form of transverse blades carried in orbit by an endless belt around two rotary toothed drums. A flat spring guides and presses the adhesive side of the tape against the blades. The belt and adhered tape are advanced by operation of a handle. The tape is severed between two tape feeding blades by a cutting blade.

In rejecting claim 1 the examiner applied 35 U.S.C. 103 and held the claim unpatentable over Kienzle. In analyzing claim 1 the examiner pointed out the structural limitations therein and found them all met by Kienzle except the support for the brush which he considered obvious. He stated that:

The remainder of the claim is made up of the preamble and functional language which incorporates therein a specific workpiece (adhesive tape) which is considered to be patentably immaterial.

Again applying 35 U.S.C. 103, the examiner rejected claims 2 to 6 as unpatentable over Kienzle in view of Hackett. He noted that claims 2-4 differ from claim 1 only in the addition of a severing means and that claims 5 and 6 further add a means to support the tape supply and a guiding means to aid delivery to the feed roll. The examiner pointed to the fact that Kienzle discloses a perforating means which punctures the sheet material supported on the brush bristles, which material passes between the perforating means and the rotatable brush. He also noted that Hackett in his disclosure of a tape dispenser teaches the use of a transverse severing means and held that it would be obvious to one skilled in the art to substitute the Hackett severing means for the perforator of Kienzle. He further noted that Hackett teaches a material supply roll and presumably includes in his dispenser guiding means as shown in Eng-

FIG. 2

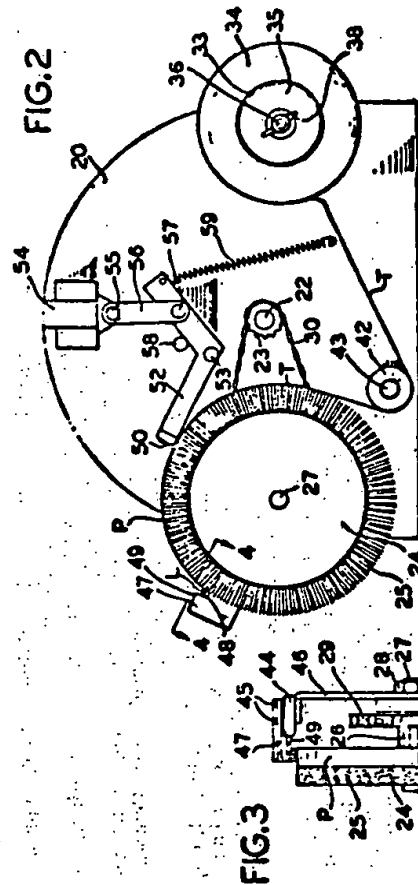
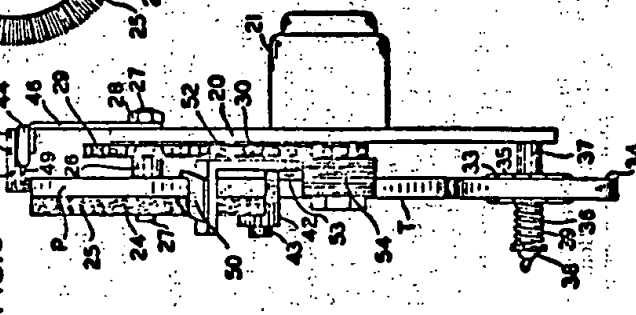


FIG. 3



The machine comprises a mounting plate 20, a hub 35 rotatably attached thereto carrying a supply roll 34 of tape T, a roller guide 42 rotatably attached to the mounting plate 20, a brush 24 rotatably attached to said mounting plate for rotation counterclockwise in response to propulsion from motor 21, and a knife 50 mounted on a pivoted arm 52 operated by solenoid 54. Tape T is threaded around roller guide 42 and the adhesive side of the tape is then adhered to the surface formed by the free ends of bristles 25 of brush 24. Operation of motor 21 will cause tape T to be pulled from supply roll 34 and moved through the machine by reason of its adhesion to brush 24. Operation of solenoid 54 brings knife 50 in contact with tape T to sever same while it is adhered to the ends of the bristles of the

The references are:

- Kienzle 2,142,728 January 3, 1939
- Hackett 2,763,481 September 18, 1956
- Engberg Re. 22,945 December 2, 1947

Kienzle shows a device for perforating various types of sheet materials by use of needle-like pins. Kienzle states:

. . . these pins can form a single group or a plurality of groups arranged side by side or behind one another, or also in staggered positions and they can be operated so as to move simultaneously, or they can be timed differently. For supporting the sheet to be perforated I use a carrier which is . . . an open structure . . . to let the pins enter freely when they penetrate the sheet farther

the disclosure of Kienzle. The board considered that the structure provided by the reference possessed the capabilities requisite to meet the terms of the board claims. The rationale of the board clearly deducible from the language employed is that the Kienzle apparatus as it obviously must be constructed would inherently perform all of the functions called for in claim 1, if it were used with adhesive tape as the workpiece.

Kienzle discloses a brush bristle surface identical to that of appellant. It must follow therefore that, in the language of the claim, the Kienzle surface is one "to which adhesive tape will detachably adhere." It also logically follows that in the use of the Kienzle device with adhesive tape, rotation of the brush would ensue "while adhesive tape is adhered to said surface." The difference between the teaching of Kienzle and of the claim in issue resides in the use of the Kienzle apparatus. If adhesive tape is used as the workpiece, the terms of claim 1 are met.

Appellant states:

The *fundamental difference* between the machine of appellant's invention and the machine shown and described by Kienzle is that appellant's machine is a tape dispenser while the machine of Kienzle is a perforating device. [Emphasis supplied.]

It seems apparent, therefore, that the position taken by appellant does not involve any unobvious difference between the structure of his apparatus and that of Kienzle, but relates solely to the matter of use of the devices. Appellant augments this position by stating his concept to be "that the adhesive contained on adhesive tape can be adhered to the ends of the bristles of a brush and the brush can then be moved to dispense the tape from the machine * * *."

We agree with the view of the solicitor that appellant's concept:

* * * would seem clearly to relate to a method, that is, a method of handling adhesive tape, rather than an apparatus. Presenting adhesive tape to a roll in such a way as to adhere it to the roll and causing movement of the roll "while adhesive tape is adhered to said surface" are method steps and cannot properly confer patentability on an apparatus claim.

[1] The claims in issue call for an apparatus or machine, viz. a tape dispensing machine. The manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself. This

view finds clear support in *In re Otto*, 50 CCPA 938, 940, 312 F.2d 937, 136 USPQ 458, 459. This court there stated:

First of all it should be remembered that the claims are directed to a particular device and a method of making that device, not to a method of curling hair wherein this particular device is used. It seems appellants are endeavoring to predicate patentability upon a certain procedure for curling hair using this device and involving a number of steps in the process. This process is irrelevant as is the recitation involving the hair being wound around the core insofar as the determination of whether these particular claims should be allowed or rejected. In *re* Lampert et al., 44 CCPA 998, 245 F.2d 253, 114 USPQ 163; In *re* Rishoi et al., 39 CCPA 1004, 197 F.2d 842, 94 USPQ 71; In *re* Mulholland, 29 CCPA 1222, 129 F.2d 860, 54 USPQ 388; In *re* Young, 22 CCPA 1050, 75 F.2d 996, 25 USPQ 69. It will be seen that the Lampert case pertains to the impropriety of relying on a method concept to distinguish a structural claim over the prior art and Rishoi and the others indicate that inclusion of the material or article worked upon by a structure being claimed does not impart patentability to the claims.

Appellant cites and relies on *In re Neugebauer*, 51 CCPA 1138, 330 F.2d 353, 141 USPQ 205; *In re Attwood*, 53 CCPA 784, 354 F.2d 365, 148 USPQ 203 and *In re Van Lint*, 53 CCPA 844, 354 F.2d 674, 148 USPQ 285. Our analysis of these cases in light of the decision reached by the board does not persuade us that they support the contention here asserted by appellant. In fact, we think the rationale of *In re Neugebauer*, wherein the preambles of the claims recited "an electrophotographic material," supports the decision of the board in the instant case. We consider pertinent here the following statement of the court relative to the weight to be accorded preambles as positive structural limitations, 141 USPQ at 208:

As to the claim preamble, the court has frequently considered problems related thereto. See, e.g., *Kropa v. Robie et al.*, 38 CCPA 858, 187 F.2d 150, 88 USPQ 478, and cases cited therein. We know no general rule for deciding the weight to be given preambles as positive structural limitations. Ellis, for example, states "Preambles are used primarily to give the field within which the invention has utility. They designate use rather than structure, form or composition. (Emphasis court's.)"

In the instant case, we do not consider it to be controlling that the reference does not in *haec verba* disclose "electrophotographic materials." The claims as a whole must be analyzed in light of the disclosure to see if the article defined thereby is distinguishable in fact, *vis-a-vis* in *verbis*, over the prior art.

In the Attwood case, the preamble itself called for a particular structure. The same is not true here. The references in claim 1 to adhesive tape handling do not expressly or impliedly require any particular structure in addition to that of Kienzle.

As to claims 2 to 6, we do not find that they involve any substantial issue of patentability over and above that presented by claim 1. In fact, appellant's brief contains no contention that these claims embrace any patentable feature not recited in claim 1.

Upon consideration of the arguments of counsel and analysis of the authorities cited, we find no reversible error in the decision of the board.

The decision of the board is therefore affirmed.

54 CCPA 943

Court of Customs and Patent Appeals
In re ANDERSSON

Appl. No. 7721 Decided Jan. 12, 1967

PATENTS

Particular patents—Ships

Andersson, Arrangement in and Relating to Propeller Driven Ships, claim 2 of application refused.

Appeal from Board of Appeals of the Patent Office.

Application for patent of Borje Andersson, Serial No. 137,873, filed Sept. 13, 1961; Patent Office Group 450. From decision rejecting claim 2, applicant appeals. Affirmed.

MICHAEL S. STRAKER, New York, N. Y., for appellant.

JOSEPH SCHIMMEL (GEORGE C. ROEMING of counsel) for Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, SMITH, and ALMOND, Associate Judges, and KIRKPATRICK, Judge.*

ALMOND, Judge.

Andersson appeals from the decision of the Patent Office Board of Appeals affirming the rejection of claim 2 of appellant's application¹ entitled "Arrangement In And Relating To Propeller Driven Ships."

Reproduced below are figures 1, 2 and 4 of appellant's drawings depicting his arrangement for a propeller driven marine vessel:

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

¹ Serial No. 137,873, filed September 13, 1961.

has given the Public Vessels Act, and, if correct, it would expand the coverage of the Public Vessels Act to all maritime claims against the United States involving a public vessel. We believe that such a reading finds no support in the text of the statute or in the purpose of the Act—even as that purpose has been broadly read by the Supreme Court.

The text of the Public Vessels Act authorizes suits not only for "damages caused by a public vessel," but also for "compensation for towage and salvage services, including contract salvage, rendered to a public vessel...." 46 U.S.C.App. § 781. The specific inclusion of particular contract claims would be meaningless if the "damages" provision extended to maritime contract claims in general. Moreover, we do not read the Supreme Court's decisions as an effort to stretch the meaning of the "damages" provision as far as it will go, but rather as an effort not to limit the phrase in an unnatural manner, in light of the congressional purpose behind the Public Vessels Act. See Grant v. Gilmore & Charles L. Black, Jr., *The Law of Admiralty*, § 11-11, at 984-85 (2d ed. 1975). *Canadian Aviator* and *American Stevedores*, while not collision cases of the type described in the legislative history, are nonetheless cases involving torts committed by the crews of public vessels that caused damage to person or property. It would be a stretch to hold that these cases support the extension of the Public Vessels Act to cover all maritime claims, whether sounding in contract or in tort.⁸

Based on our reading of the statute and of the precedent binding upon this court, we hold that Marine Coatings' claim for recovery on a maritime repair lien is not a claim authorized by the provisions of the Public Vessels Act. Consequently, this case falls within that "category of claims involving public vessels [that are] beyond the scope of the

8. Moreover, we find no reason, as the Ninth Circuit evidently did, to expand any further the coverage of the Public Vessels Act. *Canadian Aviator*, *American Stevedores*, and *Thomson* were decided at a time when an expansive reading of the "damages" provision served to enlarge the coverage of the Act. Since 1960, however, any claim not covered by the Public Vessels Act is covered by the Suits in Admiralty Act. See *supra* at 594. In short, by holding that Marine Coatings' claim is not authorized by the Public

whether the government procured [Marine Coatings] work, authorized the work, or ratified the procurement of [Marine Coatings] work. Alternatively, there is a genuine issue as to whether Braswell was authorized by the government to procure [Marine Coatings] work. Resolution of this issue is essential to determine whether [Marine Coatings] is entitled to recovery under the [Federal Maritime Lien Act]. Because we find a material issue of fact exists on this point, we REVERSE and REMAND for appropriate proceedings in the district court.

III.

[5] The district court awarded attorney's fees pursuant to 28 U.S.C. § 2412, as amended by the Equal Access to Justice Act, Pub.L. No. 96-481, Title II, § 204(a), 94 Stat. 2327 (1980), which provides, in part, that:

[A] court shall award to a prevailing party other than the United States fees and other expenses . . . incurred by that party in any civil action . . . brought by or against the United States . . . unless the court finds that the position of the United States was substantially justified or that special circumstances make an award unjust.

28 U.S.C. § 2412(d)(1)(A). Under 28 U.S.C. § 2412(d)(2)(A), "fees and other expenses" include "reasonable attorney fees."

The district court concluded that the Government was not "substantially justified" in proceeding to trial on the ground that our decision in *Marine Coatings II*, which set aside the district court's summary judgment that Marine Coatings was not entitled to a maritime lien, had "effectively decided the case." The court was mistaken; *Marine Coatings II* did not resolve the factual question. Rather, we reversed the summary judgment because we found that a genuine issue of fact existed regarding the validity of the lien. Indeed, our decision was quite specific as to what factual issues remained to be resolved:

Applying the relevant standard of review, we find that there is a genuine issue as to

Vessels Act, we do not deny the company its remedy. On the contrary, our decision enlarges Marine Coatings' remedy by allowing it to recover prejudgment interest on its damages award. By preserving the narrow scope of the Public Vessels Act, the congressional purpose of providing a remedy in these cases—the purpose that drove the Supreme Court's expansive readings—is not in any way "thwarted by an unduly restrictive interpretation." *Canadian Aviator*, 324 U.S. at 222, 65 S.Ct. at 643.

whether the government procured [Marine Coatings] work, authorized the work, or ratified the procurement of [Marine Coatings] work. Alternatively, there is a genuine issue as to whether Braswell was authorized by the government to procure [Marine Coatings] work. Resolution of this issue is essential to determine whether [Marine Coatings] is entitled to recovery under the [Federal Maritime Lien Act]. Because we find a material issue of fact exists on this point, we REVERSE and REMAND for appropriate proceedings in the district court.

Marine Coatings II, 932 F.2d at 1376. We cannot think of more "appropriate proceedings" in which to resolve a question of fact than a trial. Indeed, in its dispositive order, the district court itself points out that our decision in *Marine Coatings II* "left open the question as to whether the Government procured [Marine Coatings] work, authorized the work, or ratified the procurement of [Marine Coatings] work." After trial, the district court found that "the answer to all three questions is, 'Yes,'" and it entered judgment accordingly. There appears to be no reason, other than the district court's opinion that "[t]he Government should have settled after the Eleventh Circuit rendered its opinion," that the United States was not substantially justified in having the issues of fact in this case resolved at trial. We therefore reverse the order of the district court awarding attorney's fees to Marine Coatings.

In conclusion, we AFFIRM the district court's award of prejudgment interest and REVERSE the award of attorney's fees.



In re Michihiko OCHIAI, Taiti Okada, Osami Aki, Akira Morimoto, Kenji Kawakita, and Yoshihiro Matsushita.

No. 92-1446.

United States Court of Appeals,
Federal Circuit.

Dec. 11, 1995.

Applicant appealed decision of the United States Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences that affirmed examiner's rejection of certain claims of application for patent. The Court of Appeals held that: (1) claimed process was not obvious, and (2) obviousness determination requires fact-intensive comparison of claimed process with prior art rather than mechanical application of any per se rule.

Reversed.

1. Patents ⇐108

When references cited by patent examiner fail to establish prima facie case of obviousness, rejection of claim is improper and will be overturned. 35 U.S.C.A. § 103.

2. Patents ⇐16.14

Process for preparing particular cephem compound having antibiotic properties was not prima facie obvious; process required use of new, nonobvious acid as one of the starting materials, and prior art references did not define class of acids the knowledge of which would render obvious the use of the specifically claimed acid. 35 U.S.C.A. § 103.

3. Patents ⇐16(1)

Obviousness determination requires fact-intensive comparison of claimed process with prior art, rather than mechanical application of one or another per se rule. 35 U.S.C.A. § 103.

4. Patents ⇐104

When any applicant properly presents and argues suitable method claims, they should be examined in light of all relevant

pounds is being claimed. The *only* difference between what is being claimed and the prior art is the selection of a *slightly* different acylation agent [i.e., acid] to result in a slightly different final product. The *closest* prior art of the six references is represented by the Cook et al. 4,024,133 and, Gregson et al. patent 4,024,134. These two references use [sic, are] quite similar in their disclosure, Cook being the *most* [sic, more] relevant. Both of these references *generically* disclose the "2-amino-thiazolyl" group which appellants seek to introduce.

The examiner recognizes that the *specific* "2 amino thiazolyl" moiety has *not* been *specifically* named in [the] Cook et al. patent. However, Cook et al. when viewed from the standpoint of one skilled in the art would recognize the use of "2-amino-thiazolyl" if the final products sought were to contain this moiety. This merely states the obvious.

The facts presented here are *identical* to those that occurred in the Durden decision (*In re Durden* [763 F.2d 1406] 226 USPQ 359). The *acylating* agent herein being used has been patented by appellants, see Ochial et al. 4,203,899. The final products have also been patented by appellants which appellants acknowledge, brief page 5 footnote 4. The *only* difference between the facts in Durden those Durden [sic] and the instant situation is that appellants have *not admitted* on the record that the process is obvious. Appellants seek to distinguish the Durden decision based on this difference. However, the Durden decision is believed to be controlling because of the *reasoning* used therein and not an admission or lack of admission of the obviousness of the process. The references discussed above abundantly demonstrate the *obviousness* of the claimed process. Thus, the Court rejected the argument that a conventional manipulation or reaction was *unobvious* "notwithstanding the specific starting material or resulting product or both, is not to be found in the prior art."

(Emphasis in original). Importantly, the examiner conceded the total absence from the prior art of both the acid used and the cephem made in the process recited in claim 6. In addition, the examiner discussed no references containing any suggestion or motivation either (a) to reject known acids and select instead the particular one used in claim 6, or (b) to obtain the particular cephem made according to the process of claim 6.

On appeal, the Board affirmed the examiner's rejection. After reviewing the examiner's reliance on *In re Durden*, 763 F.2d 1406, 226 USPQ 359 (Fed.Cir.1985), and the "standard" nature of the acylation reaction disclosed in the rejected claims, the Board acknowledged Ochial's contention that the fact that "neither the final product nor the method of introducing the particular [acid] component were known, obvious or even remotely suggested in the prior art" should be dispositive of the obviousness of the invention recited in claim 6. *Ochial*, 24 USPQ2d at 1267. The Board did not, however, find Ochial's contention persuasive. According to the Board,

[w]e are not here concerned with the patentability of the starting materials, the final compounds or other processes of making the [cephem] compounds. We are concerned only with the claimed process and the patentability thereof. Cases such as *In re Larsen*, 292 F.2d 531, 49 CCPA 711, 130 USPQ 209 (CCPA 1961); *In re Albertson*, 332 F.2d 379, 51 CCPA 1377, 141 USPQ 730 (CCPA 1964) and, particularly, *In re Durden*, *supra*, all of which were directed to processes of making chemical compounds, are controlling hereinafter. In each case, a material A, either known or novel, was subjected to a standard process of reacting with a standard reactant, B, in order to produce the result expected from the reaction of A with B. Indeed in *Albertson* as in the instant case, the only manipulative step of the process is that which is embodied in the word "reacting."

Id. The Board also rejected Ochial's assertion that cases such as *In re Pleuddemann*,

Cite as 71 F.3d 1565 (Fed. Cir. 1995)

910 F.2d 823, 15 USPQ2d 1738 (Fed.Cir.1990), *In re Mancy*, 499 F.2d 1289, 182 USPQ 303 (CCPA 1974), and *In re Kuehl*, 475 F.2d 653, 177 USPQ 250 (CCPA 1973), are in tension with *Durden* and *Albertson* and counsel allowance of the rejected claims. Distinguishing *Pleuddemann*, *Mancy*, and *Kuehl* as "method of using" rather than "method of making" cases, the Board summarized its decision as follows:

In the case before us, appellants have admitted the claims are directed to a process of making a desired AB product. The process steps, "introducing" A into AB or "reacting" A with B are standard processes used by practitioners in the prior art for reacting similar A moieties with the same B moiety. We are in agreement with the examiner that there is nothing unobvious in the particular process chosen and claimed by the appellants.

Ochial, 24 USPQ2d at 1270 (emphasis in original).

Ochial appeals, contending that both the examiner and the Board failed to apply the proper test for obviousness established by *Graham v. John Deere Co.*, 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 USPQ 459 (1966), and its progeny. Specifically, according to Ochial, both the examiner and the Board, on the assumption that our decision in *Durden* controlled the outcome of the instant case, failed to weigh the specific differences between the claimed invention—with all its limitations—and the prior art references, the so-called "second *Graham* factor." See *id.* at 17, 86 S.Ct. at 693-94 ("Under § 103 differences between the prior art and the claims at issue are to be ascertained[.]"). In addition, Ochial contends that the decisions in *Mancy* and *Kuehl*, which, like all Court of Customs and Patent Appeals decisions, were in banc, limit the decision in *Albertson* to its facts.

The Solicitor, while defending the correctness of the Board's conclusion and, unlike the Board itself, doing so in the familiar terms of *Graham*, also asserts that a supposed irreconcilable conflict in our cases—between *Albertson* and *Durden*, on the one hand, and *Pleuddemann*, on the other—"makes it very difficult for patent attorneys to give cogent

The Issue

The issue before this court is whether the Board erred in upholding the examiner's rejection of claim 6 as obvious under 35 U.S.C. § 103 in view of *Larsen*, *Albertson*, and *Durden* as interpreted by the PTO when neither the particular acid used nor the particular cephem produced is either taught or suggested by the art that predates the parent application.

The Analysis

[1] The test of obviousness *vel non* is statutory. It requires that one compare the claim's "subject matter as a whole" with the prior art "to which said subject matter pertains." 35 U.S.C. § 103. The inquiry is thus highly fact-specific by design. This is so "whether the invention be a process for making or a process of using, or some other process." *Kuehl*, 475 F.2d at 665, 177 USPQ at 255. When the references cited by the examiner fail to establish a *prima facie* case of obviousness, the rejection is improper and will be overturned. *In re Fina*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed.Cir.1988).

[2] Applying this statutory test to the art of record, we conclude that Ochial's process invention as claimed is not *prima facie* obvious. The process invention Ochial recites in claim 6 specifically requires use of none other than its new, nonobvious acid as one of the starting materials. One having no knowledge of this acid could hardly find it obvious to make any cephem using this acid as an acylating agent, much less the particular cephem recited in claim 6. In other words, it would not have been obvious to those of ordinary skill in the art to choose the particular acid of claim 6 as an acylating agent for the known amine for the simple reason that

the particular acid was unknown but for Ochiai's disclosure in the '429 application. As one of our predecessor courts had occasion to observe, in a case involving a highly analogous set of facts, "one cannot choose from the unknown." *Mancry*, 499 F.2d at 1293, 182 USPQ at 306.³

In addition, although the prior art references the examiner discussed do indeed teach the use of various acids to make various cephem, they do not define a class of acids the knowledge of which would render obvious the use of Ochiai's specifically claimed acid.⁴ The Board noted that Ochiai's specifically claimed acid is "similar" to the acids used in the prior art. Likewise, the examiner asserted that the claimed acid was "slightly different" from those taught in the cited references. Neither characterization, however, can establish the obviousness of the use of a starting material that is new and nonobvious, both in general and in the claimed process. The mere chemical possibility that one of those prior art acids could be modified such that its use would lead to the particular cephem recited in claim 6 does not make the process recited in claim 6 obvious "unless the prior art suggested the desirability of [such a] modification." *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed.Cir.1984). As we noted above, the examiner discussed no references containing any suggestion or motivation either: (a) to modify known acids to obtain the particular one recited in claim 6, or (b) to obtain the particular new and nonobvious cephem produced by the process of claim 6. In short, the prior art contains nothing at all to sup-

port the conclusion that the particular process recited in claim 6 is obvious.

In light of the above, the examiner's errors are evident. First, the examiner concluded that one of ordinary skill in the art would "recognize the use of 2-aminothiazolyl" if the final products sought were to contain this moiety.⁵ The prior art, however, contains nothing at all to suggest that one seek this concededly nonobvious final product. The examiner erred by indulging in an essentially hindsight comparison of the functioning of the new acid in claim 6 as a precursor to the claimed cephem with that of other acids in the prior art processes that produced other cephem. Such a comparison uses Ochiai's specification as though it were prior art in order to make the claim to a method that uses the nonobvious acid to make the nonobvious cephem appear to be obvious. Second, the examiner incorrectly drew from *Durden*, a case turning on specific facts, a general obviousness rule: namely, that a process claim is obvious if the prior art references disclose the same general process using "similar" starting materials.⁶ No such *per se* rule exists. Mere citation of *Durden*, *Albertson*, or any other case as a basis for rejecting process claims that differ from the prior art by their use of different starting materials is improper, as it sidesteps the fact-intensive inquiry mandated by section 103. In other words, there are not "*Durden* obviousness rejections" or "*Albertson* obviousness rejections," but rather only section 103 obviousness rejections.

The Board essentially repeated the examiner's error of sidestepping the particularized inquiry required by section 103 by grounding

Id. at 1292, 182 USPQ at 305.

4. The prior art teaches the use of thienyl, pyridyl, and isothiazolyl compounds, whereas claim 6 recites the use of 2-aminothiazolyl.

5. This is most apparent from the examiner's baffling assertions that "a standard, conventional process . . . is being claimed" and that "[t]he references . . . abundantly demonstrate the routine-ness of the claimed process." Because the claimed process includes as a limitation the use of an acid unknown in the prior art, the prior art can only demonstrate the routine-ness of a process similar to the claimed one. Similarity is, of course, not necessarily obviousness.

the rejection on the supposedly "controlling" effect of "[c]lasses such as *In re Larsen*, *In re Albertson*, and, particularly, *In re Durden*, all of which were directed to processes of making chemical compounds." *Ochiai*, 24 USPQ2d at 1267 (citations omitted). After categorizing the process recited in claim 6 as a "process of making" rather than as a "process for using," the Board reached its conclusion according to the following syllogism: (a) "process of making" claims have led to rejections, as in *Larsen*, *Albertson*, and *Durden*, whereas "process for using" claims have led to allowances, as in *Kuehl*, *Mancry*, and *Pleudemann*; (b) Ochiai's claim is directed to a "process of making"; (c) therefore, the rejection should be affirmed. *Id.* at 1268-70. This method of analysis is founded on legal error because it substitutes supposed *per se* rules for the particularized inquiry required by section 103. It necessarily produces erroneous results. Moreover, the Board indulged a non sequitur when it grounded its conclusion of obviousness on the assertion that the starting materials recited in claim 6 are "similar" to those of the prior art. The recited acid is nonobvious, having itself been patented based on the parent application. Nor did the Board justify its characterization of "similarity" in any other manner. Similarity is, as we noted above, not necessarily obviousness.

The Alleged Conflict in Our Case Law

Both the Solicitor and Ochiai devote substantial portions of their briefs to purported demonstrations that our precedents on the obviousness *vel non* of chemical processes are, if not in conflict, at least in severe tension with one another and thus create unnecessary confusion. Both parties identify the same two sets of three cases as presenting the conflict: *Larsen*, *Albertson*, and *Durden*, upholding rejections on appeal, are said to be inconsistent with *Kuehl*, *Mancry*, and *Pleudemann*; reversing rejections on appeal. While we agree that some generalized commentary found within several of these decisions may present minor tensions, both Ochiai and the Solicitor draw far too bleak a picture of the state of our case law. Other language in these cases, like their actual holdings, obviates any real inconsistency.

[3] In *Albertson*, the court "reiterate[d] that all of the evidence must be considered on the 'subject matter as a whole,' from the viewpoint of one skilled in the art, in the determination of obviousness, and not simply the patentability of one of the starting reactants in a process." *Albertson*, 332 F.2d at 382, 141 USPQ at 732. Thus, the Board in this case, looked to the general result in *Albertson* while ignoring the *Albertson* court's explicit methodology. Every subsequent case that the parties discuss has been grounded on the same analytic principle: namely, that section 103 requires a fact-intensive comparison of the claimed process with the prior art rather than the mechanical application of one or another *per se* rule. See *Pleudemann*, 910 F.2d at 827, 15 USPQ2d at 1741 ("We repeat that the controlling law is in § 103 of the statute, which must be applied to the facts of this case."); *Durden*, 763 F.2d at 1411, 226 USPQ at 362 ("Our function is to apply, in each case, § 103 as written to the facts of disputed issues, not to generalize or make rules for other cases which are unforeseeable."); *Mancry*, 499 F.2d at 1292, 182 USPQ at 305 ("[T]he statutory standard of § 103 for determining obviousness of an invention is whether in view of the prior art the invention as a whole would have been obvious at the time it was made."); *Kuehl*, 475 F.2d at 665, 177 USPQ at 255 ("The test of obviousness is a statutory test and requires comparison of the invention with the prior art in each case . . ."). As a consequence, these cases do not—indeed, cannot—present or create conflicting legal rules. They present, instead, applications of a unitary legal regime to different claims and fields of art to yield particularized results. It is thus surprising that the Board relies on *Durden* for a general rule when the *Durden* court expressly cautioned the bar "not to generalize or make rules for other cases."

Because the regime of section 103, much like the Fourth Amendment proscriptions against "unreasonable" searches and warrants issued upon less than "probable cause," mandates that legal outcomes turn on the close analysis of facts, reasonable persons may well disagree about the outcome of a given obviousness determination. These dis-

Cite as 71 F.3d 1573 (Fed. Cir. 1995)

agreements over the application of a legal rule can, however, be transformed into perceived "irreconcilable conflicts" between legal rules only when, as occurred here, examiners, members of the Board, and patent lawyers purport to find competing *per se* rules in our precedents and argue for rejection or allowance of a particular claim accordingly. We acknowledge that some generalized commentary found in these cases reviewing rejections of claims directed to chemical processes may, if viewed in isolation, have inadvertently provided encouragement to those who desire *per se* rules in this area. For example, one case includes an extensive discussion of the conceptual link between the obviousness *vel non* of a chemical composition and the obviousness *vel non* of a process for making the composition.⁶ Such discussion, while entirely accurate, may have contributed to the erroneous view that one may determine the obviousness of a chemical process merely by determining whether it is a process for making a composition. As the cases noted above make clear, however, this is not and has never been the law of section 103. Indeed, *Durden*, the very case relied on by the examiner and the Board for a purported *per se* rule, clearly states that there are no such *per se* rules.

The use of *per se* rules, while undoubtedly less laborious than a searching comparison of the claimed invention—including all its limitations—with the teachings of the prior art, flouts section 103 and the fundamental case law applying it. *Per se* rules that eliminate the need for fact-specific analysis of claims and prior art may be administratively convenient for PTO examiners and the Board. Indeed, they have been sanctioned by the Board as well. But reliance on *per se* rules of obviousness is legally incorrect and must cease. Any such administrative convenience

6. See *Plaidemarian*, 910 F.2d at 827, 15 USPQ2d at 1741 ("From the standpoint of patent law, a compound and all of its properties are inseparable; they are one and the same thing." *In re Papesch*, 315 F.2d 381, 391, 50 CCPA 1084, 137 USPQ 43, 51 (1963). It is the properties of appellant's compounds, as bonding/priming agents for certain polymers and fillers or support surfaces that give them their utility. As stated above, the compounds and their use are but different aspects of, or ways of looking at, the same invention and consequently that invention

is simply inconsistent with section 103, which, according to *Graham* and its progeny, entitles an applicant to issuance of an otherwise proper patent unless the PTO establishes that the invention as claimed in the application is obvious over cited prior art, based on the specific comparison of that prior art with claim limitations. We once again hold today that our precedents do not establish any *per se* rules of obviousness, just as those precedents themselves expressly declined to create such rules. Any conflicts as may be perceived to exist derive from an impermissible effort to extract *per se* rules from decisions that disavow precisely such extraction.

[4] In sum, as we clearly indicated in *In re Dillon*, a recent in banc decision, "[w]hen any applicant properly presents and argues suitable method claims, they should be examined in light of all . . . relevant factors, free from any presumed controlling effect of *Durden*" or any other precedent. 919 F.2d 688, 695, 16 USPQ2d 1897, 1903 (Fed.Cir.1990) (in banc), *cert. denied*, 500 U.S. 904, 111 S.Ct. 1682, 114 L.Ed.2d 77 (1991). Having compared Ochiai's claims, limited as they are to the use of a particular nonobvious starting material for making a particular nonobvious end product, to the prior art of record, we reverse the rejection of claims 6 through 10 as an incorrect conclusion reached by incorrect methodology.

REVERSED



is capable of being claimed both as new compounds or as a new method or process of bonding/priming. On the other hand, a process or method of making the compounds is a quite different thing; they may have been made by a process which was new or old, obvious or nonobvious. In this respect, therefore, there is a real difference between a process of making and a process of using and the cases dealing with one involve different problems from the cases dealing with the other.")

In re MAHURKAR DOUBLE LUMEN HEMODIALYSIS CATHETER PATENT LITIGATION.

Sakharam MAHURKAR,
Plaintiff-Appellee,

Quinton Instruments Company,
Plaintiff-Appellee,

v.

IMPRA, INC., Defendant-Appellant.

No. 94-1242.

United States Court of Appeals,
Federal Circuit.

Dec. 12, 1995.

Inventor and authorized manufacturer brought infringement suit to protect patent rights to dual-lumen catheter used in hemodialysis. The United States District Court for the Northern District of Illinois, Frank H. Easterbrook, J., sitting by designation, 831 F.Supp. 1354, entered judgment for plaintiffs and awarded lost profits. Alleged infringer appealed. The Court of Appeals, Plager, Circuit Judge, held that manufacturer's sale of two patented catheters to hospital did not constitute "sale" for purpose of statutory public use or sale bar.

Affirmed.

1. Patents ¶314(5)

Whether invention is on sale is question of law, for purpose of public use or sale bar under patent statute. 35 U.S.C.A. § 102(b).

2. Patents ¶81

As one challenging validity of presumptively valid patent under public use or sale bar, accused infringer must prove by clear and convincing evidence that there was definite sale or offer to sell more than one year before application for subject patent, and that subject matter of sale or offer to sell fully anticipated claimed invention. 35 U.S.C.A. §§ 102(b), 282.

3. Patents ¶75

Whether device has been placed on sale is not subject to mechanical rule but depends on totality of circumstances, considered in view of policies underlying statutory public use or sale bar, including discouraging removal of inventions from public domain that public reasonably has come to believe are freely available, encouraging prompt and widespread disclosure of inventions, allowing inventor reasonable amount of time following sales activity to determine potential economic value of patent, and prohibiting inventor from commercially exploiting invention beyond statutorily prescribed time. 35 U.S.C.A. § 102(b).

4. Patents ¶80

Because commercialization is central focus for determining whether patented invention has been placed on sale, inventor is strictly held to requirement that inventor file patent application within one year of any attempt to commercialize invention. 35 U.S.C.A. § 102(b).

5. Patents ¶75

Patent licensee's sale of two patented double lumen catheters to hospital did not constitute "sale" for purpose of statutory public use or sale bar, as sale was sham that did not result in commercialization of catheter even though prototype sold to hospital was reduction to practice of invention; sale took place only so licensee could retain status as exclusive licensee, catheters were unusable for their intended purposes if included instructions were followed, sale did not indicate that invention was placed in public domain, and sale did not allow for determination of patent's potential value. 35 U.S.C.A. § 102(b).

See "publication Words" and Phrases for other judicial constructions and definitions.

Raymond Niro, Niro, Scavone, Haller & Niro, Chicago, Illinois, argued for plaintiff-appellee, Sakharam Mahurkar. With him on the brief were Joseph N. Hosteny, John C. Janka and Michael P. Mazza.

Michael J. Sweedler and Steven J. Baron, Darby & Darby, New York City, represented

ant as well as the public interest, the Commission abuses its discretion by declining to release the bond merely because of sales by a respondent of goods known to the complainant at the time of the agreement.

Biocraft also makes other arguments which we need not address.

CONCLUSION

The Commission's denials of Biocraft's requests for return or cancellation of bonds posted pursuant to the Temporary Cease and Desist Order issued January 10, 1990, were an abuse of discretion. Its order is therefore

REVERSED.



In re Mark A. VAECK, Wipa
Chungtutapornchai and
Lee McIntosh.

No. 91-1120.

United States Court of Appeals,
Federal Circuit.

Oct. 21, 1991.

Inventor sought patent for claimed invention directed to use of genetic engineering techniques for production of insecticidal proteins. The United States Patent and Trademark Office Board of Patent Appeals and Interferences affirmed an examiner's rejection of certain claims, and appeal was taken. The Court of Appeals, Rich, Circuit Judge, held that: (1) patent application was improperly rejected on ground of prima facie obviousness, and (2) patent application was properly rejected to extent that claims were too general to enable person skilled in art to make and use, claimed invention without undue experimentation.

Affirmed in part, reversed in part.

Mayer, Circuit Judge, dissented and filed opinion.

1. Patents ¶314(5)

Obviousness of invention for which patent is sought is legal question which court independently reviews, though based upon Patent and Trademark Office's underlying factual findings, which court reviews under clearly erroneous standard. 35 U.S.C.A. § 103.

2. Patents ¶16(2)

In reviewing rejection of invention for patent as obvious in view of combination of prior art references, court considers whether prior art would have suggested to those of ordinary skill in art that they should make claimed composition or device, or carry out claimed process, and whether prior art would also have revealed that in so making or carrying out, those of ordinary skill would have reasonable expectation of success; both suggestion and reasonable expectation of success must be found in prior art, not in applicant's disclosure. 35 U.S.C.A. § 103.

3. Patents ¶16.25

Patent application for genetic engineering techniques for production of insecticidal proteins was improperly rejected on ground of prima facie obviousness; prior art did not disclose or suggest expression in cyanobacteria of chimeric gene encoding insecticidally active protein, or convey to those of ordinary skill reasonable expectation of success in doing so. 35 U.S.C.A. § 103.

4. Patents ¶99

To be patentable, specification of patent must enable any person skilled in art to which it pertains to make and use claimed invention without undue experimentation. 35 U.S.C.A. § 112.

5. Patents ¶99

Patent application for using genetic engineering techniques to produce insecticidal proteins was properly rejected to extent that claims were too general to enable person skilled in art to make and use claimed invention without undue experimentation;

IN RE VAECK

Cite as 947 F.2d 488 (Fed. Cir. 1991)

claim. referred to use of cyanobacteria in general as host organism, despite fact that cyanobacteria were diverse and relatively poorly studied group of organisms, comprising some 150 different genera, with successful use of any one type in manner called for in invention being unpredictable. 35 U.S.C.A. § 112.

6. Patents ¶99

Although patent applicants are not required to disclose every species encompassed by their claims, even in unpredictable art, in order to satisfy enablement requirement for patentability, there must be sufficient disclosure, either through illustrative examples or terminology, to teach those of ordinary skill how to make and how to use invention as broadly as it is claimed. 35 U.S.C.A. § 112.

Ian C. McLeod, Ian C. McLeod, P.C., Okemos, Mich., argued for appellant.

Teddy S. Gron, Associate Sol., Office of the Sol., of Arlington, Va., argued for appellee. With him on the brief were Fred E. McKelvey, Sol. and Richard E. Schafer, Associate Sol.

Before RICH, ARCHER, and MAYER,
Circuit Judges.

RICH, Circuit Judge.

This appeal is from the September 12, 1990 decision of the Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences (Board), affirming the examiner's rejection of claims 1-48 and 50-52 of application Serial No. 07/021,405, filed March 4, 1987, titled "Hybrid Genes Incorporating a DNA Fragment Containing a Gene Coding for an Insecticidal Protein, Plasmids, Transformed Cyanobacteria Expressing Such Protein and Method for Use as a Biocontrol Agent" as unpatentable under 35 U.S.C. § 103, as well as the rejection of claims 49-51.

1. Basic vocabulary and techniques for gene cloning and expression have been described in *In re O'Farrell*, 853 F.2d 894, 895-99, 7 U.S.P.Q.2d 1673, 1674-77 (Fed.Cir.1988), and are not repeated here.

2. All living cells can be classified into one of two broad groups, procaryotes and eucaryotes.

BACKGROUND

A. The Invention.

The claimed invention is directed to the use of genetic engineering techniques¹ for production of proteins that are toxic to insects such as larvae of mosquitos and black flies. These swamp-dwelling pests are the source of numerous human health problems, including malaria. It is known that certain species of the naturally-occurring *Bacillus* genus of bacteria produce proteins ("endotoxins") that are toxic to these insects. Prior art methods of combating the insects involved spreading or spraying crystalline spores of the insecticidal *Bacillus* proteins over swamps. The spores were environmentally unstable, however, and would often sink to the bottom of a swamp before being consumed, thus rendering this method prohibitively expensive. Hence the need for a lower-cost method of producing the insecticidal *Bacillus* proteins in high volume, with application in a more stable vehicle.

As described by appellants, the claimed subject matter meets this need by providing for the production of the insecticidal *Bacillus* proteins within host cyanobacteria. Although both cyanobacteria and bacteria are members of the procaryote "kingdom", the cyanobacteria (which in the past have been referred to as "blue-green algae") are unique among procaryotes in that the cyanobacteria are capable of oxygenic photosynthesis. The cyanobacteria grow on top of swamps where they are consumed by mosquitos and black flies. Thus, when *Bacillus* proteins are produced with-

The procaryotes comprise organisms formed of cells that do not have a distinct nucleus; their DNA floats throughout the cellular cytoplasm. In contrast, the cells of eucaryotic organisms such as man, other animals, plants, protozoa, algae and yeast have a distinct nucleus wherein their DNA resides.

in transformed³ cyanobacterial hosts according to the claimed invention, the presence of the insecticide in the food of the targeted insects advantageously guarantees direct uptake by the insects.

More particularly, the subject matter of the application on appeal includes a chimeric (i.e., hybrid) gene comprising (1) a gene derived from a bacterium of the *Bacillus* genus whose product is an insecticidal protein, united with (2) a DNA promoter effective for expressing⁴ the *Bacillus* gene in a host cyanobacterium, so as to produce the desired insecticidal protein.

The claims on appeal are 1-48 and 50-52, all claims remaining in the application. Claim 1 reads:

1. A chimeric gene capable of being expressed in Cyanobacteria cells comprising:

- (a) a DNA fragment comprising a promoter region which is effective for expression of a DNA fragment in a Cyanobacterium; and
- (b) at least one DNA fragment coding for an insecticidally active protein produced by a *Bacillus* strain, or coding for an insecticidally active truncated form of the above protein or coding for a protein having substantial sequence homology to the active protein,

the DNA fragments being linked so that the gene is expressed.

Claims 2-15, which depend from claim 1, recite preferred *Bacillus* species, promoters, and selectable markers.⁵ Independent claim 16 and claims 17-31 which depend therefrom are directed to a hybrid plasmid vector which includes the chimeric gene of claim 1. Claim 32 recites a bacterial strain. Independent claim 33 and claims 34-48 which depend therefrom recite a cyanobac-

3. "Transformed" cyanobacteria are those that have successfully taken up the foreign *Bacillus* DNA such that the DNA information has become a permanent part of the host cyanobacteria, to be replicated as new cyanobacteria are generated.

4. "Expression" of a gene refers to the production of the protein which the gene encodes; more specifically, it is the process of transferring information from a gene (which consists of

terium which expresses the chimeric gene of claim 1. Claims 50-51 recite an insecticidal composition. Claim 52 recites a particular plasmid that appellants have deposited.

B. Appellants' Disclosure

In addition to describing the claimed invention in generic terms, appellants' specification discloses two particular species of *Bacillus* (*B. thuringiensis*, *B. sphaereticus*) as sources of insecticidal protein; and nine genera of cyanobacteria (*Synechocystis*, *Anacystis*, *Synechococcus*, *Agmenellum*, *Aphanocapsa*, *Gloeocapsa*, *Nostoc*, *Anabaena* and *Fremyella*) as useful hosts.

The working examples relevant to the claims on appeal detail the transformation of a single strain of cyanobacteria, i.e., *Synechocystis* 6803. In one example, *Synechocystis* 6803 cells are transformed with a plasmid comprising (1) a gene encoding a particular insecticidal protein ("Bt. 8") from *Bacillus thuringiensis* var. *israelensis*, linked to (2) a particular promoter, the P_L promoter from the bacteriophage Lambda (a virus of *E. coli*). In another example, a different promoter, i.e., the *Synechocystis* 6803 promoter for the rubisco operon, is utilized instead of the Lambda P_L promoter.

C. The Prior Art

A total of eleven prior art references were cited and applied, in various combinations, against the claims on appeal.

The focus of Dzelzkalns,⁶ the primary reference cited against all of the rejected claims, is to determine whether chloroplast promoter sequences can function in cyanobacteria. To that end Dzelzkalns discloses the expression in cyanobacteria of a chimeric gene comprising a chloroplast promoter

DNA) via messenger RNA to ribosomes where a specific protein is made.

5. In the context of the claimed invention, "selectable markers" or "marker genes" refer to antibiotic-resistance conferring DNA fragments, attached to the gene being expressed, which facilitate the selection of successfully transformed cyanobacteria.

6. 12 *Nucleic Acids Res.* 8917 (1984).

IN RE VAECK

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er sequence fused to a gene encoding the enzyme chloramphenicol acetyl transferase (CAT).⁷ Importantly, Dzelzkalns teaches the use of the CAT gene as a "marker" gene; this use of antibiotic resistance-conferring genes for selection purposes is a common technique in genetic engineering.

Sekar I,⁸ Sekar II,⁹ and Ganesan¹⁰ collectively disclose expression of genes encoding certain *Bacillus* insecticidal proteins in the bacterial hosts *B. megaterium*, *B. subtilis* and *E. coli*.

Friedberg¹¹ discloses the transformation of the cyanobacterium *Anacystis nidulans* R2 by a plasmid vector comprising the $O_L P_L$ operator-promoter region and a temperature-sensitive repressor gene of the bacteriophage Lambda. While the cyanobacteria are attractive organisms for the cloning of genes involved in photosynthesis, Friedberg states, problems may still be encountered such as suboptimal expression of the cloned gene, detrimental effects on cell growth of overexpressed, highly hydrophobic proteins, and rapid turnover of some gene products. To address these problems, Friedberg teaches the use of the disclosed Lambda regulatory signals in plasmid vehicles which, it states, have "considerable potential for use as vectors the expression of which can be controlled in *Anacystis*..."

Miller¹² compares the initiation specificities *in vitro* of DNA-dependent RNA polymerases purified from two different species of cyanobacteria (*Fremyella diplosiphon* and *Anacystis nidulans*), as well as from *E. coli*.

7. Chloramphenicol is an antibiotic; CAT is an enzyme which destroys chloramphenicol and thus imparts resistance thereto.

8. 137 *Biochem. and Biophys. Res. Comm.* 748 (1986).

9. 33 *Gene* 151 (1985).

10. 189 *Mol. Gen. Genet.* 181 (1983).

11. 203 *Mol. Gen. Genet.* 505 (1986).

12. 140 *J. Bacteriology* 246 (1979).

13. "RNA polymerase, the enzyme responsible for making RNA from DNA, binds at specific nucleotide sequences (promoters) in front of genes

Nierzwicki-Bauer¹⁴ identifies in the cyanobacterium *Anabaena* 7120 the start site for transcription of the gene encoding *rbcL*, the large subunit of the enzyme ribulose-1,5-bisphosphate carboxylase. It reports that the nucleotide sequence 14-8 base pairs preceding the transcription start site "resembles a good *Escherichia coli* promoter," but that the sequence 35 base pairs before the start site does not.

Chauvat¹⁵ discloses host-vector systems for gene cloning in the cyanobacterium *Synechocystis* 6803, in which the antibiotic resistance-conferring *neo* gene is utilized as a selectable marker.

Reiss¹⁶ studies expression in *E. coli* of various proteins formed by fusion of certain foreign DNA sequences with the *neo* gene.

Kolowsky¹⁷ discloses chimeric plasmids designed for transformation of the cyanobacterium *Synechococcus* R2, comprising an antibiotic-resistant gene linked to chromosomal DNA from the *Synechococcus* cyanobacterium.

Barnes, United States Patent No. 4,695,455, is directed to the treatment with stabilizing chemical reagents of pesticides produced by expression of heterologous genes (such as those encoding *Bacillus* proteins) in host microbial cells such as *Pseudomonas* bacteria. The host cells are killed by this treatment, but the resulting pesticidal compositions exhibit prolonged toxic activity when exposed to the environment of target pests.

in DNA, and then moves through the gene making an RNA molecule that includes the information contained in the gene. Initiation specificity is the ability of the RNA polymerase to initiate this process specifically at a site(s) on the DNA template.

14. 81 *Proc. Natl. Acad. Sci. USA* 5961 (1984).

15. 204 *Mol. Gen. Genet.* 185 (1986).

16. 30 *Gene* 211 (1984).

17. 27 *Gene* 289 (1984).

D. The Grounds of Rejection

1. The § 103 Rejections

Claims 1-6, 16-21, 33-38, 47-48 and 52 (which include all independent claims in the application) were rejected as unpatentable under 35 U.S.C. § 103 based upon Dzelzkals in view of Sekar I or Sekar II and Ganesan. The examiner stated that Dzelzkals discloses a chimeric gene capable of being highly expressed in a cyanobacterium, said gene comprising a promoter region effective for expression in a cyanobacterium operably linked to a structural gene encoding CAT. The examiner acknowledged that the chimeric gene and transformed host of Dzelzkals differ from the claimed invention in that the former's structural gene encodes CAT rather than insecticidally active protein. However, the examiner pointed out, Sekar I, Sekar II, and Ganesan teach genes encoding insecticidally active proteins produced by *Bacillus*, and the advantages of expressing such genes in heterologous hosts to obtain larger quantities of the protein. The examiner contended that it would have been obvious to one of ordinary skill in the art to substitute the *Bacillus* genes taught by Sekar I, Sekar II, and Ganesan for the CAT gene in the vectors of Dzelzkals in order to obtain high level expression of the *Bacillus* genes in the transformed cyanobacteria. The examiner further contended that it would have been obvious to use cyanobacteria as heterologous hosts for expression of the claimed genes due to the ability of cyanobacteria to serve as transformed hosts for the expression of heterologous genes. In the absence of evidence to the contrary, the examiner contended, the invention as a whole was prima facie obvious.

Additional rejections were entered against various groups of dependent claims which we need not address here. All additional rejections were made in view of Dzelzkals in combination with Sekar I, Sekar II, and Ganesan, and further in view of other references discussed in Part C above.

The Board affirmed the § 103 rejections, basically adopting the examiner's Answer as its opinion while adding a few comments. The legal conclusion of obviousness does not require absolute certainty, the Board added, but only a reasonable expectation of success, citing *In re O'Farrell*, 853 F.2d 894, 7 U.S.P.Q.2d 1673 (Fed. Cir.1988). In view of the disclosures of the prior art, the Board concluded, one of ordinary skill in the art would have been motivated by a reasonable expectation of success to make the substitution suggested by the examiner.

2. The § 112 Rejection

The examiner also rejected claims 1-48 and 50-51 under 35 U.S.C. § 112, first paragraph, on the ground that the disclosure was enabling only for claims limited in accordance with the specification as filed. Citing *Manual of Patent Examining Procedure* (MPEP) provisions 706.03(n) and (2) as support, the examiner took the position that undue experimentation would be required of the art worker to practice the claimed invention, in view of the unpredictability in the art, the breadth of the claims, the limited number of working examples and the limited guidance provided

546. This is because in arts such as chemistry it is not obvious from the disclosure of one species, what other species will work. *In re Dressfield*, 1940 C.D. 351; 518 O.G. 255 gives this general rule: "It is well settled that in cases involving chemicals and chemical compounds, which differ radically in their properties it must appear in an applicant's specification either by the enumeration of a sufficient number of the members of a group or by other appropriate language, that the chemicals or chemical combinations included in the claims are capable of accomplishing the desired result."

18. Denotes different species or organism.

19. MPEP 706.03(n). "Correspondence of Claim and Disclosure," provides in part:

In chemical cases, a claim may be so broad as to not be supported by [the] disclosure, in which case it is rejected as unwarranted by the disclosure.

20. MPEP 706.03(2). "Undue Breadth," provides in part:

[I]n applications directed to inventions in arts where the results are unpredictable, the disclosure of a single species usually does not provide an adequate basis to support generic claims. *In re Sol*, 1938 C.D. 723; 497 O.G.

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in the specification. With respect to unpredictability, the examiner stated that

[t]he cyanobacteria comprise a large and diverse group of photosynthetic bacteria including large numbers of species in some 150 different genera including *Synechocystis*, *Anacystis*, *Synechococcus*, *Agmenellum*, *Nostoc*, *Anabaena*, etc. The molecular biology of these organisms has only recently become the subject of intensive investigation and this work is limited to a few genera. Therefore the level of unpredictability regarding heterologous gene expression in this large, diverse and relatively poorly studied group of prokaryotes is high....

The Board affirmed, noting that "the limited guidance in the specification, considered in light of the relatively high degree of unpredictability in this particular art, would not have enabled one having ordinary skill in the art to practice the broad scope of the claimed invention without undue experimentation. *In re Fisher*, 427 F.2d 833, 166 U.S.P.Q. 18 (CCPA 1970)."

OPINION

A. Obviousness

[1] We first address whether the PTO erred in rejecting the claims on appeal as prima facie obvious within the meaning of 35 U.S.C. § 103. Obviousness is a legal question which this court independently reviews, though based upon underlying factual findings which we review under the clearly erroneous standard. *In re Woodruff*, 919 F.2d 1575, 1577, 16 U.S.P.Q.2d 1934, 1935 (Fed.Cir.1990).

[2] Where claimed subject matter has been rejected as obvious in view of a combination of prior art references, a proper analysis under § 103 requires, *inter alia*, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have

a reasonable expectation of success. See *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 U.S.P.Q.2d 1529, 1531 (Fed.Cir.1988). Both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's disclosure. *Id.*

[3] We agree with appellants that the PTO has not established the prima facie obviousness of the claimed subject matter. The prior art simply does not disclose or suggest the expression in cyanobacteria of a chimeric gene encoding an insecticidally active protein, or convey to those of ordinary skill a reasonable expectation of success in doing so. More particularly, there is no suggestion in Dzelzkals, the primary reference cited against all claims, of substituting in the disclosed plasmid a structural gene encoding *Bacillus* insecticidal proteins for the CAT gene utilized for selection purposes. The expression of antibiotic resistance-conferring genes in cyanobacteria, without more, does not render obvious the expression of unrelated genes in cyanobacteria for unrelated purposes.

The PTO argues that the substitution of insecticidal *Bacillus* genes for CAT marker genes in cyanobacteria is suggested by the secondary references Sekar I, Sekar II, and Ganesan, which collectively disclose expression of genes encoding *Bacillus* insecticidal proteins in two species of host *Bacillus* bacteria (*B. megaterium* and *B. subtilis*) as well as in the bacterium *E. coli*. While these references disclose expression of *Bacillus* genes encoding insecticidal proteins in certain transformed bacterial hosts, nowhere do these references disclose or suggest expression of such genes in transformed cyanobacterial hosts.

To remedy this deficiency, the PTO emphasizes similarity between bacteria and cyanobacteria, namely, that these are both prokaryotic organisms, and argues that this fact would suggest to those of ordinary skill the use of cyanobacteria as hosts for expression of the claimed chimeric genes. While it is true that bacteria and cyanobacteria are now both classified as prokaryotes, that fact alone is not sufficient to motivate the art worker as the PTO con-

tends. As the PTO concedes, cyanobacteria and bacteria are not identical; they are classified as two separate divisions of the kingdom Prokaryotae.²¹ Moreover, it is only in recent years that the biology of cyanobacteria has been clarified, as evidenced by references in the prior art to "blue-green algae." Such evidence of recent uncertainty regarding the biology of cyanobacteria tends to rebut, rather than support, the PTO's position that one would consider the cyanobacteria effectively interchangeable with bacteria as hosts for expression of the claimed gene.

At oral argument the PTO referred to additional secondary references, not cited against any independent claim (i.e., Friedberg, Miller, and Nierzwicki-Bauer), which it contended disclose certain amino acid sequence homology between bacteria and cyanobacteria. The PTO argued that such homology is a further suggestion to one of ordinary skill to attempt the claimed invention. We disagree. As with the Dzelakals, Sekar I, Sekar II, and Ganesan references discussed above, none of these additional references disclose or suggest that cyanobacteria could serve as hosts for expression of genes encoding *Bacillus* insecticidal proteins. In fact, these additional references suggest as much about differences between cyanobacteria and bacteria as they do about similarities. For example, Nierzwicki-Bauer reports that a certain nucleotide sequence (i.e., the -10 consensus sequence) in a particular cyanobacterium resembles an *E. coli* promoter, but that another nearby nucleotide sequence (the -35 region) does not. While Miller speaks of certain promoters of the bacteriophage Lambda that are recognized by both cyanobacterial and *E. coli* RNA polymerases, it also discloses that these promoters exhibited differing strengths when exposed to the different polymerases. Differing sensitivities of the respective polymerases to an inhibitor are also disclosed, suggesting differences in the structures of the initiation complexes.

21. *Siedman's Medical Dictionary* 1139 (24th ed. 1982) (definition of "Prokaryotae"). Prokaryotic organisms are commonly classified according to the following taxonomic hierarchy: Kingdom;

The PTO asks us to agree that the prior art would lead those of ordinary skill to conclude that cyanobacteria are attractive hosts for expression of any and all heterologous genes. Again, we can not. The relevant prior art does indicate that cyanobacteria are attractive hosts for expression of both native and heterologous genes involved in *photosynthesis* (not surprisingly, for the capability of undergoing oxygenic photosynthesis is what makes the cyanobacteria unique among prokaryotes). However, these references do not suggest that cyanobacteria would be equally attractive hosts for expression of *unrelated* heterologous genes, such as the claimed genes encoding *Bacillus* insecticidal proteins.

In *O'Farrell*, this court affirmed an obviousness rejection of a claim to a method for producing a "predetermined protein, in a stable form" in a transformed bacterial host. 853 F.2d at 895, 7 U.S.P.Q.2d at 1674. The cited references included a prior art publication (the Polisky reference) whose three authors included two of the three coinventor-appellants. The main difference between the prior art and the claim at issue was that in Polisky, the heterologous gene was a gene for ribosomal RNA, while the claimed invention substituted a gene coding for a predetermined protein. *Id.* at 901, 7 U.S.P.Q.2d at 1679. Although, as the appellants therein pointed out, the ribosomal RNA gene is not normally translated into protein, Polisky mentioned preliminary evidence that the transcript of the ribosomal RNA gene was translated into protein, and further predicted that if a gene coding for a protein were to be substituted, extensive translation might result. *Id.* We thus affirmed, explaining that the prior art explicitly suggested the substitution that is the difference between the claimed invention and the prior art, and presented preliminary evidence suggesting that the [claimed] method could be used to make proteins.

Division; Class; Order; Family; Genus; Species. 3 *Bergey's Manual of Systematic Bacteriology* 1601 (1989).

... Polisky contained detailed enabling methodology for practicing the claimed invention, a suggestion to modify the prior art to practice the claimed invention, and evidence suggesting that it would be successful.

Id. at 901-02, 7 U.S.P.Q.2d at 1679-80.

In contrast with the situation in *O'Farrell*, the prior art in this case offers no suggestion, explicit or implicit, of the substitution that is the difference between the claimed invention and the prior art. Moreover, the "reasonable expectation of success" that was present in *O'Farrell* is not present here. Accordingly, we reverse the § 103 rejections.

B. Enablement

[4] The first paragraph of 35 U.S.C. § 112 requires, *inter alia*, that the specification of a patent enable any person skilled in the art to which it pertains to make and use the claimed invention. Although the statute does not say so, enablement requires that the specification teach those in the art to make and use the invention without "undue experimentation." *In re Wands*, 858 F.2d 731, 737, 8 U.S.P.Q.2d 1400, 1404 (Fed.Cir.1988). That *some* experimentation may be required is not fatal; the issue is whether the amount of experimentation required is "undue." *Id.* at 736-37, 8 U.S.P.Q.2d at 1404. Enablement, like obviousness, is a question of law which we independently review, although based upon underlying factual findings which we review for clear error. *See id.* at 735, 8 U.S.P.Q.2d at 1402.

[5] In response to the § 112 rejection, appellants assert that their invention is "pioneering," and that this should entitle them to claims of broad scope. Narrower claims would provide no real protection, appellants argue, because the level of skill in this art is so high, art workers could easily avoid the claims. Given the disclosure in their

22. The enablement rejection in this case was not based upon a post-filing date state of the art, as in *In re Hogan*, 559 F.2d 595, 605-07, 194 U.S.P.Q. 527, 536-38 (CCPA 1977). *See also United States Steel Corp. v. Phillips Petroleum Co.*, 865 F.2d 1247, 1251, 9 U.S.P.Q.2d 1461, 1464 (Fed.Cir.1989) (citing *Hogan*); *Hormone*

specification, appellants contend that any skilled microbiologist could construct vectors and transform many different cyanobacteria, using a variety of promoters and *Bacillus* DNA, and could easily determine whether or not the active *Bacillus* protein was successfully expressed by the cyanobacteria.

The PTO made no finding on whether the claimed invention is indeed "pioneering," and we need not address the issue here. With the exception of claims 47 and 48, the claims rejected under § 112 are not limited to any particular genus or species of cyanobacteria. The PTO's position is that the cyanobacteria are a diverse and relatively poorly studied group of organisms, comprising some 150 different genera, and that heterologous gene expression in cyanobacteria is "unpredictable." Appellants have not effectively disputed these assertions. Moreover, we note that only one particular species of cyanobacteria is employed in the working examples of appellants' specification, and only nine genera of cyanobacteria are mentioned in the entire document.

Taking into account the relatively incomplete understanding of the biology of cyanobacteria as of appellants' filing date, as well as the limited disclosure by appellants of particular cyanobacterial genera operative in the claimed invention, we are not persuaded that the PTO erred in rejecting claims 1-46 and 50-51 under § 112, first paragraph. There is no reasonable correlation between the narrow disclosure in appellants' specification and the broad scope of protection sought in the claims encompassing gene expression in any and all cyanobacteria. *See In re Fisher*, 427 F.2d 833, 839, 166 U.S.P.Q. 18, 24 (CCPA 1970) (the first paragraph of § 112 requires that the scope of the claims must bear a reasonable correlation to the scope of enablement provided by the specification).²² Accordingly,

Research Found., Inc. v. Genentech, Inc., 904 F.2d 1558, 1568-69, 15 U.S.P.Q.2d 1039, 1047-48 (Fed.Cir.1990) (directing district court, on remand, to consider effect of *Hogan* and *United States Steel* on the enablement analysis of *Fisher*), cert. dismissed, — U.S. —, 111 S.Ct. 1434, 113 L.Ed.2d 485 (1991). We therefore do not

we affirm the § 112 rejection as to those claims.

[6] In so doing we do not imply that patent applicants in art areas currently designated as "unpredictable" must never be allowed generic claims encompassing more than the particular species disclosed in their specification. It is well settled that patent applicants are not required to disclose every species encompassed by their claims, even in an unpredictable art. *In re Angstadt*, 537 F.2d 498, 502-03, 190 U.S.P.Q. 214, 218 (CCPA 1976). However, there must be sufficient disclosure, either through illustrative examples or terminology,²³ to teach those of ordinary skill how to make and how to use the invention as broadly as it is claimed. This means that the disclosure must adequately guide the art worker to determine, without undue experimentation, which species among all those encompassed by the claimed genus possess the disclosed utility. Where, as here, a claimed genus represents a diverse and relatively poorly understood group of microorganisms, the required level of disclosure will be greater than, for example, the disclosure of an invention involving a "predictable" factor such as a mechanical or electrical element. See *Fisher*, 427 F.2d at 839, 166 U.S.P.Q. at 24. In this case, we agree with the PTO that appellants' limited disclosure does not enable one of ordinary skill to make and use the invention as now recited in claims 1-46 and 50-51 without undue experimentation.

Remaining dependent claim 47 recites a cyanobacterium which expresses the chim-eric gene of claim 1, wherein the cyanobacterium is selected from among the genera *Anacystis* and *Synechocystis*. Claim 48, which depends from claim 47, is limited to the cyanobacterium *Synechocystis* 6803. The PTO did not separately address these claims, nor indicate why they should be treated in the same manner as the claims encompassing all types of cyanobacteria.

Consider the effect of *Hogan* and its progeny on *Fisher's* analysis of when an inventor should be allowed to "dominate the future patentable inventions of others." *Fisher*, 427 F.2d at 839, 166 U.S.P.Q. at 24.

Although these claims are not limited to expression of genes encoding particular *Bacillus* proteins, we note what appears to be an extensive understanding in the prior art of the numerous *Bacillus* proteins having toxicity to various insects. The rejection of claims 47-48 under § 112 will not be sustained.

CONCLUSION

The rejection of claims 1-48 and 50-52 under 35 U.S.C. § 103 is reversed. The rejection of claims 1-46 and 50-51 under 35 U.S.C. § 112, first paragraph, is affirmed and the rejection of claims 47 and 48 thereunder is reversed.

AFFIRMED-IN-PART, REVERSED-IN-PART.

MAYER, Circuit Judge, dissenting.

An appeal is not a second opportunity to try a case or prosecute a patent application, and we should not allow parties to "undertake to retry the entire case on appeal." *Pertini America, Inc. v. Paper Converting Machine Co.*, 832 F.2d 581, 584, 4 U.S.P.Q.2d 1621, 1624 (Fed.Cir.1987); *Eaton Corp. v. Appliance Valves Corp.*, 790 F.2d 874, 877, 229 U.S.P.Q. 668, 671 (Fed.Cir.1986). But that is precisely what the court has permitted here. The PTO conducted a thorough examination of the prior art surrounding this patent application and concluded the claims would have been obvious. The board's decision based on the examiner's answer which comprehensively explains the rejection is persuasive and shows how the evidence supports the legal conclusion that the claims would have been obvious. Yet, the court ignores all this and conducts its own examination, if you will, as though the examiner and board did not exist. Even if I thought this opinion were more persuasive than the board's, I could

23. The first paragraph of § 112 requires nothing more than objective enablement. *In re Marzocchi*, 439 F.2d 220, 223, 169 U.S.P.Q. 367, 369 (CCPA 1971). How such a teaching is set forth, either by the use of illustrative examples or by broad terminology, is irrelevant. *Id.*

not join it because it misperceives the role of the court.

The scope and content of the prior art, the similarity between the prior art and the claims, the level of ordinary skill in the art, and what the prior art teaches are all questions of fact. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 86 S.Ct. 684, 693-94, 15 L.Ed.2d 545, 148 U.S.P.Q. 459, 467 (1966); *Jurgens v. McKay*, 927 F.2d 1552, 1560, 18 U.S.P.Q.2d 1031, 1037 (Fed.Cir.1991). And "[w]here there are two permissible views of the evidence, the factfinder's choice between them cannot be clearly erroneous." *Anderson v. City of Bessemer City*, 470 U.S. 564, 574, 105 S.Ct. 1504, 1511-12, 84 L.Ed.2d 518 (1985). The mere denomination of obviousness as a question of law does not give the court license to decide the factual matters afresh and ignore the requirement that they be respected unless clearly erroneous. *In re Woodruff*, 919 F.2d 1575, 1577, 16 U.S.P.Q.2d 1934, 1935 (Fed.Cir.1990); *In re Kulling*, 897 F.2d 1147, 1149, 14 U.S.P.Q.2d 1056, 1057 (Fed.Cir.1990). There may be more than one way to look at the prior art, but on this record we are bound by the PTO's interpretation of the evidence because it is not clearly erroneous and its conclusion is unassailable. I would affirm on that basis.



LEVERNIER CONSTRUCTION,
INC., Plaintiff-Appellee,

The UNITED STATES, Defendant-
Appellant.

No. 91-5058.

United States Court of Appeals,
Federal Circuit.

Oct. 22, 1991.

Construction contractor sought attorney fees and expenses under the Equal

Access to Justice Act (EAJA) after settlement of equitable adjustment claim. On original hearing, the Claims Court, Reginald W. Gibson, J., 21 Cl.Ct. 683, granted application in part and denied it in part. Contractor sought reconsideration. The Claims Court, 22 Cl.Ct. 247, granted the motion, and held that contractor was entitled to recover additional amount representing consultant fees and expenses. Government appealed. The Court of Appeals, Bennett, Senior Circuit Judge, held that: (1) prosecution of equitable adjustment claim before contracting officer was not a "civil action" within meaning of the EAJA, and thus contractor was not entitled to recover consultant fees incurred in preparation of equitable adjustment claim; (2) Claims Court erred in applying 18% cost of living adjustment (COLA) to paralegal fees awarded under the EAJA; and (3) it was error to apply 18% (COLA) to hourly rates of attorneys whose time was claimed at \$75 an hour.

Reversed.

1. United States ¶147(12)

Prosecution of equitable adjustment claim before contracting officer was not "civil action" within meaning of the Equal Access to Justice Act (EAJA), and thus contractor was not entitled to recover fees incurred by contract claim consultant for preparation of equitable adjustment claim. 28 U.S.C.A. § 2412.

See publication Words and Phrases for official judicial constructions and definitions.

2. United States ¶147(5)

Equal Access to Justice Act (EAJA) is a waiver of sovereign immunity which must be strictly construed. 28 U.S.C.A. § 2412.

3. United States ¶147(4)

In formulating an award of attorney fees under the Equal Access to Justice Act (EAJA), court may adjust statutory cap governing rate of attorney fees upward to account for an increase in cost of living. 28 U.S.C.A. § 2412(d)(2)(A)(ii).

REVERSED in part, and AFFIRMED in part.



4. Patents \S 16.24

Claim for apparatus for mixing cementitious material involving a pump means and feed means with a pumping capacity greater than the feed rate of the ingredients into the mixing chamber in order to draw air into the mixing chamber and entrain it in the mixed ingredients was not obvious in light of prior patent for mixing cementitious material through a device in which the pumping speed could be greater than the feed speed, as the prior device made no reference to producing area rated cementitious material. 35 U.S.C.A. \S 103.

5. Patents \S 16(2)

Fact that prior art apparatus may be capable of being modified to run the way claimed by another's apparatus does not render the new apparatus obvious if there is no suggestion or motivation in the reference to do so. 35 U.S.C.A. \S 103.

6. Patents \S 16(2)

On the issue of obviousness, it is not pertinent whether prior art device possesses the functional characteristics of the claimed invention if the reference does not describe or suggest its structure. 35 U.S.C.A. \S 103.

James C. Wray, McLean, Va., argued for appellant.

Muriel E. Crawford, Asst. Sol., Office of the Sol., Arlington, Va., argued for appellee. With her on the brief was Fred E. McKelvey, Sol.

Before MAYER and LOURIE, Circuit Judges, and MILLER, Senior Circuit Judge.

after remand. Even a premature motion is considered timely. *James*, 783 F.2d at 998-99; *Haitian Refugee Center*, 791 F.2d at 1495. Should the claimant need to amend that petition later to reflect additional time expenditures, such time would be recoverable. *Pollgreen v. Morris*, 911 F.2d 527, 536 n. 13 (11th Cir.1990).

In re Peter S. MILLS.

No. 90-1184.

United States Court of Appeals,
Federal Circuit.

Oct. 9, 1990.

Applicant appealed from order of the Board of Patent Appeals and Inferences which rejected claims. The Court of Appeals, Lourie, Circuit Judge, held that fact that referenced prior art might be capable of being modified to run the way claimed by applicant for his apparatus did not render his apparatus obvious.

Reversed.

1. Patents \S 45

Determination of Board of Patent Appeals and Inferences that differences between the claim and machine described in prior art lay solely in the functional language of the claim suggested lack of novelty rather than obviousness. 35 U.S.C.A. \S 102, 103.

2. Patents \S 314(5)

Nonobviousness is a question of law to be determined from the facts. 35 U.S.C.A. \S 103.

3. Patents \S 113(6)

Board of Patent Appeals and Inferences' determination of obviousness is re-

benefits should be treated as the "final judgment" that commences the 30-day period. See *Melkonian v. Hecker*, 895 F.2d 556 (9th Cir. 1990). While that position would seem to be contrary to *Sullivan v. Hudson*, 490 U.S. at 109 S.Ct. at 2255, claimants may want to be safe and file any motion for EAJA attorney's fees within 30 days of the Secretary's final decision

Cite as 916 F.2d 680 (Fed. Cir. 1990)

LOURIE, Circuit Judge.

This appeal is from the November 2, 1989, decision of the United States Patent and Trademark Office Board of Patent Appeals and Inferences (Board), Appeal No. 88-0141, affirming the examiner's rejection, under 35 U.S.C. \S 103, of claims 6-9 and 11-14 in Mills' application Serial No. 891,874, a continuation of Serial No. 687-805, filed May 4, 1984, entitled "Methods of and Apparatus for Producing Aerated Cementitious Compounds." The remainder of the claims (1-5, 10, and 15) have all been cancelled. We reverse.

I

BACKGROUND

A. The Invention

Mills' claimed invention is an apparatus for producing aerated cementitious compositions. Claim 6 is the broadest claim:

6. Apparatus for producing an aerated cementitious composition, comprising

a mixing chamber being open to atmosphere and containing mixing means, feed means for feeding ingredients comprising cement, foaming agent and liquid to the mixing chamber, mixing means for mixing ingredients fed to the mixing chamber, pump means for pumping the mixed ingredients to a desired site and having a pump inlet connected to an outlet of the mixing chamber,

drive motor means connected through gearbox means providing a pumping capacity of the pump means greater than the feed rate of the ingredients to the mixing chamber provided by the feed means, such that in operation air is drawn into the mixing chamber, and entrained in the mixed ingredients.

The examiner rejected the claims at issue under 35 U.S.C. \S 103 as being unpatentable not only over Mathis but also in view of Gibson et al. U.S. Patent 2,717,770. However, the Board affirmed the examiner's rejection of claims 6-9 and 11-14 based solely on the Mathis reference. With regard to Gibson the Board stated:

"We view the teachings of Gibson at best as being merely confirmatory of the fact that

The essence of Mills' invention is the machine's ability to aerate a cementitious composition by driving the output pump at a capacity greater than the feed rate, thereby drawing air into the composition. This aeration produces a composition with substantially lower density than standard cementitious composition mixing ingredients.

B. The Reference

The sole reference upon which the Board relied in affirming the examiner's rejection was Mathis et al. U.S. Patent 4,117,547 (Mathis).¹ Mathis discloses a mixing chamber which is open to the atmosphere and which contains a mixing means. Two feed means for feeding ingredients in the mixing chamber are provided. The first feed means may consist of a screw conveyor and the second, a flow metering device such as an adjustable valve. A pump means pumps the mixture from the mixing chamber to a desired site and a drive motor means is connected to mixing means and pump means. A separate motor drives the feed means.

A control system exists to arrest the feed means so as not to overflow the mixing chamber. This system comprises a level detector in the mixing chamber, which signals the feed means to close when the mixing chamber stores the predetermined maximum permissible quantity of material.

C. The Rejection

The Board affirmed the examiner's Section 103 rejection of claims 6-9 and 11-14, "finding correspondence in the Mathis reference for all of the subject matter recited in the appellants' claims...." With regard to Mills' claim language relating to aerating the mixture, the Board stated: "[I]n our opinion, the differences between claim 6 and the Mathis machine... lie solely in

aerated mixtures can be produced by machines in which a pump means operates upon a mixing chamber at a greater rate so that air is drawn into the mixing chamber and entrained in the mixed ingredients.

App. 2.

the functional language of the claim." The Board further found that Mathis teaches the use of separate input and output motors in order to permit the various mixing means and pumps to operate at different rates, and that Mathis "contemplates a situation wherein the rate of the outlet pump would be greater than the inlet pumps...." The Board concluded on this point: "[w]e are of the opinion that the Mathis machine is capable of being operated in such a fashion as to cause [the output] pump 18 to draw air into the mixing chamber 17 so that it is entrained in the mixture."

The Board also agreed with Mills' contention that Mathis is not directed to the problem of producing aerated cementitious material, but noted that Mills is not claiming a method, but an apparatus, and all of Mills' apparatus structure is present in the Mathis machine.

II

DISCUSSION

[1] All of the rejected claims are apparatus claims. The Board found "correspondence in the Mathis reference for all of the subject matter recited in appellants' claims" and that "[t]he Mathis machine discloses all of the structure set forth in claim 1" (a method claim not before us). It asserts that the use of such a mechanism would have been obvious and that the differences between claim 6 and the Mathis machine lie solely in the functional language of the claim, the preamble merely stating an intended use for the machine. This language suggests a lack of novelty rejection under 35 U.S.C. § 102, rather than an obviousness rejection. However, no Section 102 rejection has been made or is before us. What is before us is a rejection for obviousness, and we must decide whether the Board erred in that rejection.

[2, 3] We note first that nonobviousness is a question of law to be determined from the facts. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535, 218 USPQ 871, 876 (Fed.Cir.1983). We review the Board's determination of obviousness, based on the

scope and content of the Mathis reference and the differences between the Mathis reference and the Mills claims, for correctness or error. *In re Carleton*, 599 F.2d 1021, 1024 n. 14, 202 USPQ 165, 169 n. 14 (CCPA 1979).

[4, 5] After reviewing the record, the arguments in the briefs, and the Mathis reference, we conclude that Mathis would not have rendered the claimed invention obvious. The closest Mathis comes to suggesting Mills' claimed apparatus is at column 3, lines 42-47, which states

[T]he rate at which the inlet 2b receives a solid constituent depends on the speed of the feed screw 4. Such speed can be regulated by a prime mover 6 which includes a variable-speed transmission.

This brief reference contains no suggestion of "pump means and the feed means providing a pumping capacity of the pump means greater than the feed rate of ingredients to the mixing chamber provided by the feed means, such that in operation air is drawn into the mixing chamber, and air entrained in the mixed ingredients," as provided for in Mills' claim 6. While Mathis' apparatus may be capable of being modified to run the way Mills' apparatus is claimed, there must be a suggestion or motivation in the reference to do so. See *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed.Cir.1984) ("The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification."). We see no such suggestion. The apparatus claimed by Mills is different from that of Mathis, since the fact that motor 6 of Mathis (the feed means) can be run at a variable speed does not require that motor 20 (connected to the pump) be run at a lesser speed "such that in operation air is drawn into the mixing chamber and air entrained in the mixed ingredients."

[6] The Board found that the difference between the claimed subject matter and the prior art resided solely in functional language and that appellant had to show that the prior art device lacked the functional characteristics of the claimed device, citing

In re Ludtke, 441 F.2d 660, 58 C.C.P.A. 1159, 169 USPQ 563 (CCPA 1971). *Ludtke*, however, dealt with a rejection for lack of novelty, in which case it was proper to require that a prior art reference cited as anticipating a claimed invention be shown to lack the characteristics of the claimed invention. That proof would in fact negate the assertion that the claimed invention was described in the prior art. We are here, however, facing an obviousness issue. It is not pertinent whether the prior art device possesses the functional characteristics of the claimed invention if the reference does not describe or suggest its structure. That is the case here. Given the facts before us, we hold that the Board was in error in affirming the examiner's rejection of claims 6-9 and 11-13 as obvious in view of Mathis, and we therefore reverse the Board.

REVERSED.



GERBER GARMENT TECHNOLOGY, INC., Plaintiff-Appellant,

v.

LECTRA SYSTEMS, INC. and Lectra Systems, S.A., Defendants-Appellees.

No. 89-1743.

United States Court of Appeals,
Federal Circuit.

Oct. 10, 1990.

Patent holder brought action for infringement. The United States District Court for the Northern District of Georgia, Charles A. Moyer, Jr., J., granted summary judgment for defendant, holding that patent was invalid, and appeal was taken. The Court of Appeals, Markey, Circuit Judge, held that divisional application claims for fabric-cutting machines were so like cutting apparatus claim of parent ap-

plication, upon which restriction requirement had been imposed, as to be not consonant with claims not elected in responding to restriction requirement and hence invalid for obviousness-type double patenting.

Affirmed.

See also 699 F.Supp. 1576.

1. Patents ¶120

Compliance with restriction requirement means claims in divisional application must be consonant with those not elected under that requirement.

2. Patents ¶324.2

Even though summary judgment for defendant, determining invalidity of one of plaintiff's patents was interlocutory partial judgment not appealable absent certification, judgment would be reviewed as though it were appealable in that it formed basis for court's denial of patent holder's request for preliminary injunction, which was itself appealable. 28 U.S.C.A. § 1292(c)(1); Fed.Rules Civ.Proc.Rule 54, 28 U.S.C.A.

3. Patents ¶120

"Obviousness-type double patenting," as ground for invalidating patent, is judge-made criterion adopted out of necessity where courts were faced with situation in which claims in two applications or patents were not drawn precisely to same invention, but were drawn to inventions so very much alike as to render one obvious in view of the other and to effectively extend the life of the patent that would have the earlier of the two issue dates.

See publication Words and Phrases for other judicial constructions and definitions.

4. Patents ¶120

Divisional application filed as result of restriction requirement may not contain claims drawn to inventions set forth in claims elected and prosecuted to patent in parent application; divisional application must have claims drawn only to "other invention" contained in parent application. 35 U.S.C.A. § 121.